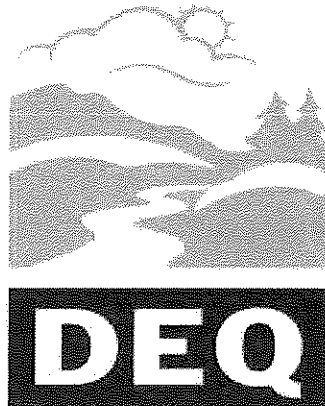


**OREGON
ENVIRONMENTAL QUALITY
COMMISSION MEETING
MATERIALS 08/22/1991**



**State of Oregon
Department of
Environmental
Quality**

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State of Oregon
ENVIRONMENTAL QUALITY COMMISSION

A G E N D A

TELEPHONE CONFERENCE MEETING -- August 22, 1991

DEQ Conference Room 3b
811 S. W. 6th Avenue
Portland, Oregon

9:00 a.m.

Hearing Authorizations

NOTE: When a rulemaking hearing is authorized, a public hearing will be scheduled and held to receive public comments. Following the hearing, the item will be returned to the Commission for consideration and final adoption of rules. The Commission may receive public testimony at this meeting on the issue of whether a proposed item should be authorized for public hearing. Testimony on the merits of the proposed rule should be presented later at the authorized public hearing.

- A. Hearing Authorization: Revised PM₁₀ Control Strategy for the Medford-Ashland Air Quality Maintenance Area (AQMA)
- B. Hearing Authorization: Revised PM₁₀ Control Strategy for the Klamath Falls Nonattainment Area
- C. Hearing Authorization: Revised PM₁₀ Control Strategy for Grants Pass
- D. Hearing Authorization: New PM₁₀ Control Strategy for the LaGrande Air Quality Nonattainment Area
- E. Hearing Authorization: New Industrial PM₁₀ Emission Standard Rules and other Related House-keeping Measures
- F. Hearing Authorization: Rule Amendments for the Rogue Basin Open Burning Special Control Area
- G. Hearing Authorization: Residential Wood Heating Rule Amendments

The next Commission meeting is presently scheduled for Wednesday, September 18, 1991, at DEQ offices in Portland, Oregon.

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

August 7, 1991

INTEROFFICE MEMORANDUM

DATE: August 15, 1991

TO: Environmental Quality Commission

FROM: Fred Hansen, Director *Ful*

SUBJECT: August 22, 1991 Meeting, Overview of PM₁₀ Agenda Items

There are seven agenda items covering four control strategies and eight rules relating to PM₁₀ that are proposed for hearing authorization. In order to help your understanding of these items, and in particular how they relate to each other, the following background information is provided.

WHAT IS PM₁₀? - PM₁₀ consists of solid or liquid particles of less than 10 microns in size (about one-tenth the diameter of a human hair) that are primarily emitted from combustion sources. They are capable of passing deeply into the respiratory system, remaining there for weeks to years. Their chemical constituency can adversely affect the body, reducing lung capacity, causing irritations, and even cancer. Residential woodheating is the major source of concern with respect to exceedance of PM₁₀ standards in Oregon. Industry and open burning sources are also significant.

AREAS EXCEEDING PM₁₀ STANDARDS - The EQC adopted the new federal PM₁₀ standard in May of 1988. At that time the following four areas exceeded the standard:

- Eugene/Springfield
- Grants Pass
- Medford area
- Klamath Falls

Since May 1988 the following additional areas have been determined to exceed the PM₁₀ standard:

- La Grande
- Oakridge



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PM₁₀ CONTROL STRATEGIES PREVIOUSLY ADOPTED - Control strategies to attain compliance with the PM₁₀ standard were adopted by the EQC in the November 1990-January 1991 period for the first four areas found to exceed PM₁₀ standards in the state.

NEW CLEAN AIR ACT REQUIREMENTS FOR PM₁₀ - The new Clean Air Act Amendments of 1990 impose new requirements on states with respect to PM₁₀ which necessitate, in some cases, revisions to existing PM₁₀ control strategies, adoption of new PM₁₀ control strategies and adoption of new and revised PM₁₀ related rules. Major new PM₁₀ related requirements of the amended Act are:

- establishes a November 15, 1991 deadline to submit PM₁₀ control strategy revisions to the state implementation plan.
- establishes a December 31, 1994 deadline to attain compliance with the PM₁₀ standard.
- requires adoption of specific Reasonably Available Control Measures for woodheating, open burning and industry.
- requires contingency plans that will be automatically implemented if the December 31, 1994 attainment date of the Act is not met.
- requires adoption of specific Best Available Control Measures for industry within 18 months of the date and area fails to meet the attainment deadline.
- requires that all PM₁₀ related rules and enforceable provisions of the PM₁₀ control strategy be approved by EPA as a condition of EPA being able to fully approve the PM₁₀ control strategy.

REVISED PM₁₀ CONTROL STRATEGIES AND FORMATS - Agenda items A, B and C regarding the Medford, Klamath Falls and Grants Pass areas are revisions to existing PM₁₀ control strategies. The Lane Regional Air Pollution Authority will be conducting hearings on a revised Eugene/Springfield PM₁₀ strategy. This will be brought to the November EQC meeting for adoption along with the above three strategy revisions. Format-wise, the Medford and Grants Pass agenda items contain a specific addendum to the originally adopted control strategy document. The Klamath Falls agenda item contains a total rewrite of the control strategy document because of the extensive changes brought about by the adoption of a new, comprehensive, Klamath County Ordinance.

NEW PM₁₀ CONTROL STRATEGIES - Agenda item D regarding the La Grande area is a totally new control strategy which must, according to Clean Air Act requirements, be adopted and implemented on the same schedule as the original four strategies adopted by the EQC. La Grande was designated nonattainment on November 15, 1990 and therefore is subject to the original schedule to achieve compliance. Oakridge, because of its recent designation as a nonattainment area, has until December of 1992 for adoption of a control strategy.

MEDFORD AREA CONTROL STRATEGY ISSUES - (Agenda Item A) The repeal of a Central Point mandatory woodheating curtailment ordinance by voters in November 1990 will require DEQ to utilize its new legislative authority to curtail woodheating unless Central Point reinstates its ordinance. Also, some local citizens want more controls on slash burning than are required under the Clean Air Act. In this regard, DEQ is continuing to work with the Department of Forestry outside of the PM₁₀ control strategy process to try and develop further programs to protect PM₁₀ nonattainment areas from smoke intrusions. EQC action to consider approval of amendments to the smoke management plan should occur at the November EQC meeting.

Agricultural interests are not supportive of the proposed uniform ventilation criteria for open burning, which in some portions of the airshed results in less burn days for this practice. Less stringent local ventilation criteria for open burning is feared if uniform state regulations are not adopted.

KLAMATH FALLS CONTROL STRATEGY ISSUES - (Agenda item B) The County has recently passed a comprehensive air pollution control ordinance which includes mandatory woodheating curtailment and several other stringent measures to control PM₁₀. The city is expected to follow suit shortly.

The contingency plan includes a DEQ proposed industrial component which would basically bring industrial PM₁₀ emission controls up to the levels currently required in the Medford and Grants Pass areas which are felt to represent Best Available Control Technology. The large Weyerhaeuser wood products facility, which is near the nonattainment area, would face large control costs unless they can show through an impact study that the complex is not significantly contributing to the nonattainment conditions.

GRANTS PASS CONTROL STRATEGY ISSUES - (Agenda item C) While voluntary woodheating curtailment is adequate for the

attainment strategy, mandatory curtailment is needed in the Grants Pass contingency plan to meet Clean Air Act/EPA requirements. The area is not likely to trigger the contingency plan, as it is already very close to attainment. Consequently, local government was not pressed to adopt a backup mandatory curtailment ordinance because of its being a local controversial issue. Instead, state backup curtailment authority is proposed in the control strategy. If mandatory curtailment is ultimately needed, the Department would urge local government to maintain local control by adopting a mandatory curtailment program.

LA GRANDE CONTROL STRATEGY ISSUES - (Agenda item D) The city of La Grande recently adopted a comprehensive PM₁₀ control ordinance which includes all needed measures to meet Clean Air Act requirements. The ordinance includes a contingency mandatory curtailment program (voluntary curtailment is considered sufficient to attain the PM₁₀ standard). Some citizens and elected officials have been resistant to the program because of the relatively new nature of the problem and the demanding schedule of the Clean Air Act. Long-term funding support for the local government effort will be a continuing issue (as it likely will be in all PM₁₀ nonattainment areas because of Measure 5 budget cuts).

INDUSTRIAL RULE ISSUES - (Agenda item E) Four separate PM₁₀ rules which support the control strategies are being addressed in this agenda item. The most controversial is the contingency plan which would impose significant new and costly emission controls on industries in the Klamath Falls, La Grande and Eugene/Springfield areas if the areas fail to meet the Clean Air Act Attainment deadline. The Department believes that this action is required under the Clean Air Act to meet the reasonably and best available control technology (RACT/BACT) requirements. RACT must be required no later than when the contingency plan is triggered. The Act requires BACT to be adopted within 18 months of the time the contingency plan is triggered. The Department proposes to establish one uniform set of standards that meet both RACT and BACT requirements now, and require compliance on the same schedule allowed by the Act for BACT; that is, four years after triggering of the contingency plan.

The Department believes this approach would provide early guidance and would be the most cost-effective approach for industry to meet the Clean Air Act's requirements. However, there are two potential concerns with this approach. First, industrial sources may argue that the Clean Air Act does not require BACT to be included in the contingency plan submitted in November, 1991 (which is true). Second, some members of the

public may argue that establishing BACT now could result in less stringent emission standards than if the Department waited until 1996 (due to potential control technology advances).

The other three rule revisions relating to Medford/Grants Pass industrial rules, state Board Products industrial rules and ambient air quality standards are considered housekeeping in nature to address EPA concerns generally about enforceability issues.

Other housekeeping industrial rule revisions relating to new source review, emission trading, and possibly plant site emission limits are also needed to ensure approvability of PM₁₀ control strategies. There was insufficient time to address these items for this agenda. It is expected that they will be brought to the EQC for hearing authorization at the November meeting. This schedule should not jeopardize PM₁₀ SIP approval as they should be able to be adopted and submitted to EPA during the time PM₁₀ control strategies are being reviewed by EPA.

ROGUE BASIN OPEN BURNING RULE ISSUES - (Agenda item F) State-wide rules require a ventilation index of 200 or more before open burning can be allowed. Several local governments in the Rogue Basin - including Jackson County, Ashland, Central Point, and Jacksonville - have adopted a more stringent ventilation index of 400 in response to PM₁₀ concerns. Other local governments in the Basin have adopted a ventilation index of 200 or are relying on the state-wide index of 200. The lack of a uniform ventilation index in the Rogue Basin raises equity issues, and the Department is concerned that this will lead to a relaxation of the more protective indices because agricultural interests are expressing unhappiness about the more restrictive index. Therefore, the Department is proposing a uniform ventilation index of 400 for the Basin, equal to the more stringent standard adopted by several local governments. Tightening of the rules in some areas of the Basin to provide uniform stringency is supported by local fire chiefs. The Department believes that stringent regulation of all significant PM₁₀ sources (including open burning) in this critical airshed is justified.

RESIDENTIAL WOODHEATING RULE ISSUES - (Agenda item G) Three new rules are proposed that implement provisions of HB 2175. The sales ban on used, uncertified stoves, and the state backup curtailment authority, are essential elements for meeting the Clean Air Act requirements for adopting reasonably available control measures for woodheating. The Department is proposing to utilize the broad legislative authority for state curtailment to cover both control strategies in PM₁₀

Memo to: Environmental Quality Commission
August 15, 1991
Page 6

nonattainment areas and protection from emergency episodes (air pollution approaching a level which substantially endangers the population) in other (attainment) areas of the state. A generic rule is proposed for state backup curtailment authority which would allow the Department to react in a timely fashion if a local government defaults in adopting or implementing such programs required under the Clean Air Act. If the EQC chose to adopt individual curtailment programs only when they are needed (as allowed by HB 2175), some areas could be temporarily with no regulatory program to control woodsmoke during high pollution periods.

The requirement for destruction of a non-certified woodstove upon home sale in any PM₁₀ nonattainment area that fails to meet the attainment deadline is the main contingency plan element proposed for all PM₁₀ nonattainment areas. While enforcement procedures are not spelled out clearly in HB 2175, the Department believes the rule as proposed will be workable and effective. The Department may propose appropriate revisions to this rule in the future, however, if more specific and effective enforcement mechanisms are identified prior to the 1994 attainment deadline.

INTERESTED PARTY REVIEWS - Conceptual control strategies and rules were sent to all interested parties for comment. The summary listing of PM₁₀ control strategies in attachment F in each of the four Control Strategy Agenda Items (Agenda items A-D) is very similar to the mailing to interested parties. Copies of these attachments are appended to this overview for ease of reference by the EQC. A relatively short time was available for interested party comment prior to finalization of the EQC hearing authorization agenda items; but, some comments were received and addressed to the extent possible. With more time and detail available for review of the agenda items through the rule-making hearing process, other issues and controversies are likely to surface.

FH:JFK:e
RPT\AH15024
Attachment

**Summary of Proposed PM₁₀ Control Strategy
Medford-Ashland Air Quality Maintenance Area (AQMA)**

Who? When? Key: L=Local Government, S=State Agency,
E=Existing Strategies, N=New Strategies,
C=New Contingency Plan

Residential Woodburning Controls:

L/S	E	Woodburning public education program;
L	E	Voluntary cordwood seasoning program;
L	E	Financial assistance programs to assist low-income households in weatherization and replacement of conventional woodstoves with cleaner burning units (Project CLEAR and SOLVE Program, about \$1.5 million raised to date);
L	E	Mandatory woodburning curtailment to achieve 85% compliance during air stagnation episodes in the PM ₁₀ Critical Control Area;
L	E	Ban on installation of non-certified woodstoves in Medford and the unincorporated portion of the AQMA;
S	E	EPA\DEQ certification program for new woodstoves;
S	N	Backup authority from 1991 Legislature for DEQ to adopt mandatory curtailment programs in the event that local governments fail to adopt, implement or enforce local ordinances (in November 1990, Central Point voters repealed their mandatory curtailment program);
S	N	Statewide ban from 1991 Legislature on the sale and installation of used, non-certified woodstoves;
S	C	State backup authority from 1991 Legislature to require removal of non-certified woodstoves upon sale of property.

Fugitive Dust Controls:

L	E	Winter road sanding emissions reduced through use of pea gravel aggregate and rapid cleanup;
L	E	Mandatory prevention or cleanup of trackout from unpaved areas onto roadways;

Who? When? Key: L=Local Government, S=State Agency,
E=Existing Strategies, N=New Strategies,
C=New Contingency Plan

L E Financial assistance programs to pave unpaved roads
and curb unpaved shoulders on paved roads.

Open Burning Controls:

L E Year-round ban on open burning in the City of
Medford;

L E Seasonal bans on open burning and restrictive
ventilation index criteria in other cities and in
Jackson County within the AQMA;

S E Ban on commercial, industrial and land-clearing
open burning within the Rogue Basin Open Burning
Special Control Area;

S E Mandatory forestry smoke management program in the
Restricted Area (area west of crest of Cascades
plus the Deschutes National Forest) limiting slash
burning to times and locations that smoke is not
expected to impact designated areas such as the
Medford-Ashland AQMA;

S E Voluntary forestry smoke management program to
restrict all BLM slash burning within 30 miles of
the Medford-Ashland AQMA on red residential
woodburning curtailment days;

S N Revision of the ventilation criteria for the Rogue
Basin Open Burning Special Control Area from the
current 200 index to the more restrictive 400
index;

S C Ban on open burning within the Rogue Basin Open
Burning Control Area during November, December,
January, and February.

Industrial Controls:

S E More restrictive AQMA industrial rules than the
statewide requirements for particle dryers,
fiberboard plants, charcoal furnaces, air conveying
systems, large wood-fired boilers, wigwam burners,
operation and maintenance, fugitive emissions, and
source testing (implemented during 1978-84);

Who? When? Key: L=Local Government, S=State Agency,
E=Existing Strategies, N=New Strategies,
C=New Contingency Plan

- | | | |
|---|---|---|
| S | E | New industrial rules adopted in 1989 to require additional air pollution controls on veneer dryers and large wood fired-boilers; |
| S | E | Additional continuous emission monitoring and periodic source testing requirements on industrial sources to maximize performance of control equipment and minimize emissions; |
| S | E | More restrictive offset requirements for new or expanded industrial operations; |
| S | C | Tightening of industrial rules for air conveying systems and charcoal plants to insure meeting RACT/BACT or better emission control; |
| S | C | Feasibility study on dual-fueling on large wood-fired boilers, with the alternate fuel to be used on red or yellow days. |

- S C State backup authority from 1991 Legislature to require removal and destruction of noncertified woodstoves upon sale of home.
- L C Fuelwood seasoning requirement on all firewood sold within Klamath County;
- L C Expansion of the nonattainment area Keno-Midland area south to the California border;
- L C Prohibition on installation of more than one woodstove in a new dwelling;

Fugitive Dust Controls:

- S E Winter road sanding emissions reduced by 60% through use of deicing materials, use of less aggregate and rapid cleanup;
- S E Mandatory cleanup of trackout from unpaved areas onto state highway right-of-ways enforced through Oregon Department of Transportation Administrative Rules;
- L E Prohibition of off-road RV use on open fields and hillsides within the nonattainment area;
- L E Dust control on public and private landfill sites, abandoned construction sites and quarries as well as lots without ground cover;
- L E Requirements to cover haul trucks;
- L E Construction sites within the nonattainment area required to have asphalt trackout strips to reduce trackout;

Open Burning Controls:

- L N Year around prohibition on agricultural open burning within the nonattainment area and within one-quarter mile of the nonattainment area boundary;
- L N Prohibition on highway right-of-way burning within the County;
- L N Prohibition on residential open burning on wood burning curtailment days;

- L N Voluntary agricultural smoke management program on farm lands within Klamath County;
- S N Voluntary forestry smoke management program on forest lands within approximately 25 miles of the nonattainment area.
- L C Mandatory agricultural burning compliance with Klamath County burning advisories within Klamath County.
- L C Mandatory forestry burning compliance with Klamath County burning advisories within Klamath County.

Industrial Controls:

- S E Tightened emission offset requirements to manage emission growth for industrial significant emission rates from 15 down to 5 tons of PM₁₀ per year.
- S C Require installation of RACT/BACT industrial particulate emission controls within nonattainment area;
- S C Require installation of RACT/BACT industrial particulate emission controls near nonattainment areas if source emissions have a significant impact on the nonattainment area.

LTR\AH14494
8/12/91

Summary of Proposed PM₁₀ Control Strategy
Grants Pass Urban Growth Boundary (UGB)

Who? When? Key: L=Local Government, S=State Agency,
E=Existing Strategies, N=New Strategies,
C=New Contingency Plan

Residential Woodburning Controls:

L/S	E	Woodburning public education program;
L	E	Voluntary woodburning curtailment to achieve 25% compliance during air stagnation episodes in the PM ₁₀ Critical Control Area;
S	E	EPA\DEQ certification program for new woodstoves;
S	N	Backup authority from 1991 Legislature for DEQ to adopt mandatory curtailment programs in the event that local governments fail to adopt, implement or enforce local ordinances that are necessary to meet air quality standards (DEQ does not expect that a mandatory curtailment program will be needed to meet standards in Grants Pass, and air monitoring data from 1988-90 further supports this position);
S	N	Statewide ban from 1991 Legislature on the sale and installation of used, non-certified woodstoves;
S	C	State authority from the 1991 Legislature to require removal of non-certified woodstoves upon sale of property.

Open Burning Controls:

L	E	Year-round ban on open burning in the City of Grants Pass;
L	E	Ban on open burning within the Rogue Basin Open Burning Special Control Area when the ventilation index is less than 200;
S	E	Ban on commercial, industrial and land-clearing open burning within the Rogue Basin Open Burning Special Control Area;

Who? When? Key: L=Local Government, S=State Agency,
E=Existing Strategies, N=New Strategies,
C=New Contingency Plan

Open Burning Controls (continued):

- | | | |
|---|---|--|
| S | E | Mandatory forestry smoke management program in the Restricted Area (area west of crest of Cascades plus the Deschutes National Forest) limiting slash burning to times and locations that smoke is not expected to impact designated areas such as the Medford-Ashland AQMA; |
| S | N | Revision of the ventilation criteria for the Rogue Basin Open Burning Special Control Area from the current 200 index to the more restrictive 400 index; |
| S | C | Ban on open burning within the Rogue Basin Open Burning Control Area during November, December, January, and February. |

Industrial Controls:

- | | | |
|---|---|---|
| S | E | New industrial rules adopted in 1989 to require additional air pollution controls on veneer dryers and large wood fired-boilers; |
| S | E | Additional continuous emission monitoring and periodic source testing requirements on industrial sources to maximize performance of control equipment and minimize emissions; |
| S | C | Slight tightening of certain industrial rules to insure meeting RACT/BACT or better emission control; |

Summary of Proposed PM₁₀ Control Strategy
La Grande Nonattainment Area

Who? When? Key: L=Local Government S=State Authority
 E=Existing Rule N=New Strategy
 C=Contingency Plan

Residential Woodburning Controls:

- L N Woodburning public education program;
- L N Home weatherization and woodstove replacement program for low income homeowners funded at \$325,000;
- L N Voluntary woodburning curtailment program to achieve 30% compliance;
- L N Before and after "windshield surveys" to provide a means of assessing the voluntary woodstove curtailment effectiveness;
- S N Statewide ban from the 1991 Legislature on the sale and installation of used, non-certified woodstoves;
- S E EPA\DEQ certification program for new woodstoves;
- L C Mandatory woodburning curtailment program designed to achieve at least a 30% compliance rate;
- S C Backup authority from 1991 Legislature for DEQ to adopt mandatory curtailment programs in the event that local governments fail to adopt, implement or enforce local ordinances;
- S C Backup authority from 1991 Legislature to require removal of non-certified woodstoves upon sale of property.

Fugitive Dust Controls:

- L/S N Winter road sanding emissions reduced by 10%;
- L N Stabilization of dust on unpaved gravel roads;

- L N Paving of gravel streets;
- L N Phase-out of unpaved roads, parking lots and staging areas;
- L N Requirements for dust control plans for construction, land clearing or material storage piles;
- L N Paving of commercial developments;
- L N Curbing of new paved streets;
- L N Stabilization of unpaved areas using chemical palliatives;
- S N Control of highway right-of-way trackout from unpaved areas by Oregon Department of Transportation rules;

Open Burning Controls:

- L N Prohibition on residential open burning on curtailment days;
- L N Mandatory agricultural open field burning smoke management program;
- S C Voluntary forestry smoke management program implemented within Union County and surrounding forest lands if smoke is a significant contributor to nonattainment.

Industrial Controls:

- S C Require installation of RACT/BACT industrial particulate emission controls.

BRF:e
 RPT\AH15017
 (8/14/91)

REQUEST FOR EQC ACTION

Meeting Date: August 22, 1991
Agenda Item: A
Division: Air Quality
Section: Planning & Development

SUBJECT:

Hearing Authorization: Revised PM₁₀ Control Strategy for the Medford-Ashland Air Quality Maintenance Area (AQMA).

PURPOSE:

To meet new Clean Air Act requirements.

ACTION REQUESTED:

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

- Authorize Rulemaking Hearing
 - Adopt Rules
 - Proposed Rules
 - Rulemaking Statements
 - Fiscal and Economic Impact Statement
 - Public Notice

- Attachment A
- Attachment B
- Attachment C
- Attachment D

- Issue a Contested Case Order
- Approve a Stipulated Order
- Enter an Order
 - Proposed Order

Attachment ___



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Meeting Date: August 22, 1991
Agenda Item: A
Page 2

<input type="checkbox"/> Approve Department Recommendation	
<input type="checkbox"/> Variance Request	Attachment <input type="checkbox"/>
<input type="checkbox"/> Exception to Rule	Attachment <input type="checkbox"/>
<input type="checkbox"/> Informational Report	Attachment <input type="checkbox"/>
<input type="checkbox"/> Other: (specify)	Attachment <input type="checkbox"/>

DESCRIPTION OF REQUESTED ACTION:

An addendum to the control strategy for PM₁₀ (small particulate air pollution) is proposed for the Medford-Ashland Nonattainment Area to ensure attainment of federal ambient air quality standards. This addendum to the control strategy must be submitted to the U.S. Environmental Protection Agency by November 15, 1991 under the new Clean Air Act requirements.

National PM₁₀ (particulate matter less than 10 micrometers in size) ambient air quality health standards were exceeded in the Medford-Ashland Air Quality Maintenance Area (AQMA) approximately 20 days per year during 1984-86. Maximum concentrations were over twice the 24-hour air quality health standard. PM₁₀ concentrations have improved during 1984-91 but still violate the annual average and 24-hour air quality health standards. The 1990 Clean Air Act (Act) requires states to revise PM₁₀ control strategies for nonattainment areas to assure attainment of the air quality health standards.

The revised strategy for Medford-Ashland includes specific Reasonably Available Control Measures (RACMs) and a contingency plan. The Department of Environmental Quality (DEQ, Department) is proposing to utilize its new backup woodstove curtailment authority for Central Point to meet the enforceability requirements of the Act for RACMs for woodstoves. Other RACMs include a ban on sale and installation of used non-certified woodstoves and a more restrictive ventilation index for open burning.

Proposed contingency plans which would automatically go into effect if the area fails to attain the PM₁₀ standard by the Act deadline of December 31, 1994, include removal and destruction of non-certified woodstoves upon home sale, a November-February ban on open burning, and additional industrial control systems that meet the Act's requirements for Reasonable and Best Available Control Technology (RACT/BACT).

Meeting Date: August 22, 1991
Agenda Item: A
Page 3

A complete listing of the control strategy is presented in Attachment F. The proposed control strategy has been designed to assure attainment of the air quality standards and meet the requirements of the Clean Air Act.

AUTHORITY/NEED FOR ACTION:

- Required by Statute: _____ Attachment _____
Enactment Date: _____
 Statutory Authority: ORS 468.305 Attachment E
 Pursuant to Rule: _____ Attachment _____
 Pursuant to Federal Law/Rule:
Federal Clean Air Act Amendments of 1990. Attachment _____
 Other: Attachment _____
 Time Constraints:

The 1990 Clean Air Act requires states to:

- o Submit revised PM₁₀ control strategies (including contingency plans) by November 15, 1991;
- o Fully implement the attainment strategies by December 10, 1993;
- o Attain PM₁₀ standards by December 31, 1994; and
- o Implement contingency plan by July 1, 1995, if PM₁₀ standards are not met by December 31, 1994.

DEVELOPMENTAL BACKGROUND:

- Advisory Committee Report/Recommendation Attachment _____
 Hearing Officer's Report/Recommendations Attachment _____
 Response to Testimony/Comments Attachment _____
 Prior EQC Agenda Items:
Agenda Item E, September 8, 1989 Medford Industrial Rules
Agenda Item E, January 31, 1991 Medford-Ashland PM₁₀ Plan
Attachment _____
 Other Related Reports/Rules/Statutes: Attachment _____
 Supplemental Background Information
Summary of Control Strategy and Contingency Plan Attachment F

Meeting Date: August 22, 1991
Agenda Item: A
Page 4

The Medford-Ashland PM₁₀ Control Strategy was adopted by the Environmental Quality Commission (EQC, Commission) on January 31, 1991, as a part of the State Implementation Plan. At the time of adoption it was recognized that additional elements would be needed by November 15, 1991, to address the repeal of the Central Point residential woodburning ordinance and to meet new requirements of the Clean Air Act. This revision provides these additional elements.

The contingency plan was developed in consideration of Environmental Protection Agency (EPA) guidance and consultation and the provisions of House Bill (HB) 2175. Local interested persons and groups were contacted and their comments on the conceptual program outlined in Attachment F were considered.

REGULATED/AFFECTED COMMUNITY CONSTRAINTS/CONSIDERATIONS:

Implementation of the PM₁₀ air pollution control strategy involves residents, industries, local governments, and state and federal agencies. Residents with woodstoves and fireplaces and owners/operators of wood products industries are the two groups most affected by the previous PM₁₀ attainment strategies (adopted in September 1989 and January 1991) and the proposed revisions to the strategy, including the contingency plan.

In the event that a PM₁₀ control strategy for the Medford-Ashland area is not adopted as a revision to the State Implementation Plan, the Clean Air Act requires economic sanctions which include restricting federal highway funds, increased emission offset requirements for new or expanding industry, and ultimately a Federal Implementation Plan to be implemented by EPA.

Other considerations include the issue of smoke from forestry slash burning which is of significant concern among the public. Although the current Oregon Department of Forestry (ODOF) Smoke Management Program meets Clean Air Act requirements, revision to the SIP to strengthen protection of PM₁₀ nonattainment areas from smoke impacts are being discussed with ODOF and will be included in the SIP in the near future.

Within the regulated community, the principal concern will likely be the proposed RACT\BACT industrial emission strategy and contingency plan. The Department is proposing adoption of rules that would establish BACT in the contingency plan instead of waiting until

eighteen months after the contingency trigger as allowed under the Clean Air Act in order to give industry some certainty of requirements early in the process and to avoid the establishment of two different standards within a short time-frame. Industry and environmental groups may not agree with the Department's determination of BACT and its interpretation of Clean Air Act requirements. The Department's proposal and alternatives are further explained in the documentation for the proposed industrial emission standard rules under agenda item E for the August 22, 1991 EQC meeting.

The economic impacts of the proposed strategy are outlined in Attachment C.

PROGRAM CONSIDERATIONS:

If the City of Central Point does not replace the mandatory woodburning curtailment ordinance repealed by voters in November 1990, then the Department would be required to implement a curtailment program directly or in cooperation with Jackson County. The Department has requested additional federal funding to carry out this task.

The contingency plan, if required due to failure to meet PM₁₀ standards by the December 1994 deadline, would also require new Department work which should be able to be integrated into existing permitting program activities and fee structure and woodstove program activities.

ALTERNATIVES CONSIDERED BY THE DEPARTMENT:

1. Defer action to EPA. If a state fails to meet the Clean Air Act PM₁₀ requirements, EPA is required to impose sanctions and ultimately prepare a Federal Implementation Plan (FIP) to address the PM₁₀ problems.
2. Hold up adoption of the SIP and encourage Central Point to reconsider a mandatory woodburning curtailment ordinance.
3. Rely only on the destruction of non-certified woodstoves upon home sales provision of HB2175 for the contingency plan and not address other significant sources affecting airshed PM₁₀ violations. This alternative would be perceived by the community as inequitable and would weaken cooperative efforts of citizens needed to effectively implement the plan.

Meeting Date: August 22, 1991
Agenda Item: A
Page 6

4. Propose revisions to Medford-Ashland PM₁₀ control strategy to include a State operated Central Point curtailment program, a State ban on sale of non-certified woodstoves, and a contingency plan for industry, woodstoves, and open burning.

DEPARTMENT RECOMMENDATION FOR ACTION, WITH RATIONALE:

The Department recommends the fourth alternative in order to: 1) implement the new legislative authority regarding residential woodburning programs, 2) provide a balanced strategy affecting all major sources, 3) insure attainment of PM₁₀ standards, and 4) fulfill Clean Air Act requirements.

The Department requests authorization to hold public hearings to revise the SIP by adopting attachment A as an addendum to the PM₁₀ air pollution control strategy for the Medford-Ashland AQMA.

CONSISTENCY WITH STRATEGIC PLAN, AGENCY POLICY, LEGISLATIVE POLICY:

The proposed PM₁₀ control strategies are consistent with Goals 2, 3, 4, and 5 of the Strategic Plan. The Department is not aware of any conflicts with agency or legislative policy. The proposed strategy and supporting rules are consistent with the Oregon Benchmarks goal of increasing the percentage of Oregonians living in areas which meet ambient air quality standards.

ISSUES FOR COMMISSION TO RESOLVE:

Does the EQC concur with the proposed manner of implementing the recent woodheating statutes and the overall balance of the contingency plans?

Meeting Date: August 22, 1991
Agenda Item: A
Page 7

INTENDED FOLLOWUP ACTIONS:

1. Hold public hearings on the proposed revisions to the Medford-Ashland PM₁₀ air pollution control strategy.
2. Summarize public testimony and respond to issues.
3. Propose adoption, with appropriate revisions in response to testimony, at the November 1991 EQC Meeting.

Approved:

Director:

Division:

Section:

Julie Hahn

Sam Greenwood

John Kaurulyys

Report Prepared By: Merlyn Hough (229-6446)

Date Prepared: August 14, 1991

MLH:
RPT\AH15006
(8/14/91)

State of Oregon
Department of Environmental Quality
Air Quality Division

State Implementation Plan Revision (Addendum)
for PM₁₀ in the Medford-Ashland Area

A Plan for Attaining and Maintaining the
National Ambient Air Quality Standards
for PM₁₀

(Note: The original control strategy document, adopted by the Environmental Quality Commission on January 31, 1991, is available upon request at the Oregon Department of Environmental Quality, Air Quality Division, 811 SW 6th Avenue, Portland, OR 97204.)

August 1991

AMENDMENTS TO JANUARY 31, 1991 MEDFORD-ASHLAND PM₁₀ STRATEGY

Preface (Revised) 3

Executive Summary (Revised) 5

 Residential Wood Combustion Strategies 7

 Wood Products Industry Strategies 7

 Open Burning Strategies 7

 Road Dust Strategies 8

 Other Strategies 8

 Strategy Emission Reduction - 24 Hour Worst Case Day 8

 Strategy Emission Reduction - Annual Average Case 10

 Air Quality Standard Maintenance 11

 Contingency Plan 12

 Enforceability 12

4.14.0.1 Introduction (Revised) 14

4.14.0.2 SIP Overview (Revised) 14

4.14.6 Addendum (New Section) 15

4.14.6.1 Purpose of the Addendum 15

4.14.6.2 Ambient Air Quality Update 15

 Residential Woodburning Curtailment 25

 Installation or Sale of Used Noncertified

 Woodstoves 25

 Ventilation Criteria for Open Burning 26

 Forestry Slash Burning 26

4.14.6.4 Reasonably Available Control Measures

 (RACM/RACT) and Best Available Control

 Measures (BACM/BACT) 27

 Urban Fugitive Dust RACM 28

 Residential Wood Combustion RACM 29

 Prescribed Burning RACM 31

4.14.6.5 Contingency Plan Commitments 31

 Residential Woodburning Curtailment 32

 Noncertified Woodstove Removal Upon Home Sale 32

 Industrial RACT/BACT Requirements 32

 Seasonal Ban on Open Burning 33

 Seasonal Restrictions on Slash Burning 33

4.14.6.6 Additional Rules and Regulations 33

4.14.6.7 Lead Agency Designation 34

4.14.6.8 Resource Commitments 34

4.14.6.9 Reasonable Further Progress 35

4.14.6.10 Plan Revision Provisions 35

4.14.6.11 Reviewing and Permitting New Sources 35

4.14.6.12 Public Involvement Update 36

Preface (Revised)

~~[Significant changes have occurred since the initial air quality analysis of this PM₁₀ control strategy and the proposal as a revision to the State Implementation Plan:~~

- ~~--1. The Central Point ordinance for curtailment of woodburning during air pollution episodes was repealed by voters in November 1990, and~~
- ~~--2. The 1990 Clean Air Act was passed by Congress and signed by the President on November 15, 1990.~~

~~As a result, several additions to this plan are needed to fully meet the 1990 Clean Air Act requirements. The shortfall caused by the repeal of the Central Point ordinance must be corrected. Sections must be added or expanded to identify an enforceable contingency plan, reasonable further progress reporting, and possibly other provisions of the 1990 Clean Air Act to be clarified by the U.S. Environmental Protection Agency in the months ahead. These additions are expected by November 15, 1991, as required by the 1990 Clean Air Act.~~

~~The 1990 Clean Air Act also requires that PM₁₀ air quality standards be attained by December 31, 1994.~~

The Medford-Ashland PM₁₀ Control Strategy was adopted by the Environmental Quality Commission (EQC) on January 31, 1991, as a part of the State Implementation Plan. At the time of adoption it was recognized that additional elements would be needed by November 15, 1991, to address the repeal of the Central Point residential woodburning ordinance and to meet new requirements of the Clean Air Act passed by Congress and signed by the President on November 15, 1990. This revision updates the Executive Summary and Introduction and includes an addendum which:

1. Reviews the results of recent and expanded PM₁₀ monitoring in the Medford-Ashland Air Quality Maintenance Area (AQMA);
2. Identifies additional control measures, including a mandatory woodburning curtailment program for the Central Point area, to insure that the strategy is adequate for attainment of PM₁₀ standards on schedule;
3. Includes commitments for a contingency plan that would automatically go into effect if PM₁₀ standards are not achieved by the deadline of the Clean Air Act;
4. Evaluates the PM₁₀ control strategy against Reasonably Available Control Measures (RACM) and Best Available Control Measures (BACM);

5. Identifies the lead agency and resource commitments to insure that the control strategy will be implemented and enforced;
6. Describes provisions for reporting reasonable further progress, revising the plan if necessary, and reviewing and permitting new sources; and
7. Updates the public involvement process, including a public hearing and intergovernmental review on this addendum.

The addendum is included as a new Section 4.14.6 of the State Implementation Plan.

Executive Summary (Revised)

The U.S. Environmental Protection Agency (EPA) adopted new particulate National Ambient Air Quality Standards (NAAQS) for PM₁₀ on July 1, 1987. PM₁₀ particulate is less than 10 micrometers in aerodynamic diameter or about one-tenth of the diameter of a human hair. The Clean Air Act requires that States develop and adopt State Implementation Plan (SIP) revisions to assure that areas which exceed the PM₁₀ standards are brought into attainment ~~[within the time frames prescribed by the Clean Air Act (September 1991)]~~ by December 31, 1994. This document describes the State of Oregon plan to attain the PM₁₀ standards in the Medford-Ashland Air Quality Maintenance Area (AQMA).

High exposure to particulate matter is of concern because of human health effects such as changes in lung functions and increased respiratory symptoms, aggravation of existing respiratory and cardiovascular disease, alternation in the body's defense system against foreign materials, damage to lung tissue, increased risk of cancer and, in extreme cases, premature death. Most sensitive to the effects of particulate matter are people with chronic obstructive pulmonary cardiovascular disease and those with influenza, asthmatics, the elderly, children and mouth-breathers.

Air quality measurements taken in Medford have determined that the 24-hour PM₁₀ health standard was exceeded an average of about 20 days per year during the winter months in 1984-86. In addition, the annual average concentration of PM₁₀ exceeded the annual PM₁₀ health standard.

The PM₁₀ standards adopted by the EPA, and subsequently adopted by the Oregon Environmental Quality Commission, were established to protect public health and welfare. The 24-hour PM₁₀ standard is 150 micrograms per cubic meter of air ($\mu\text{g}/\text{m}^3$). The maximum 24-hour concentration of PM₁₀ measured in Medford was over 300 $\mu\text{g}/\text{m}^3$. The 24-hour standard cannot be exceeded more than an average of one day per year. The annual average PM₁₀ concentration in Medford is about 58 to 68 $\mu\text{g}/\text{m}^3$ in the peak areas compared to the average annual PM₁₀ standard of 50 $\mu\text{g}/\text{m}^3$.

An inventory of PM₁₀ emissions developed for the Medford-Ashland Air Quality Maintenance Area (AQMA) indicates that the major sources of particulate emissions are residential wood combustion, industry, and soil and road dust. Annual average and worst day PM₁₀ emissions during the baseline period (1985-86) are compared in the following table.

<u>Source Category</u>	<u>Annual PM₁₀ Emissions (%)</u>	<u>Worst Day PM₁₀ Emissions (%)</u>
Residential woodsmoke	38	60
Wood products industry	27	18
Soil and road dust	22	18
<u>Other</u>	<u>13</u>	<u>4</u>
Total	100	100

The air pollution impacts from these PM₁₀ emissions have been measured, calculated and verified at various locations within the AQMA through the combination of the air monitoring network (PM₁₀ measurement stations), dispersion modeling (mathematical modeling of diffusion in the atmosphere), and receptor modeling (chemical fingerprinting) techniques.

PM₁₀ design values are those 24-hour worst case and annual average concentrations from which reductions must be made to achieve compliance with the standards. The 24-hour design value represents the fourth highest daily concentration measured in a 3-year period; the annual design value represents the 3-year average concentration.

The design values were determined with the following considerations. The eight highest 24-hour PM₁₀ concentrations during 1984-86 occurred during December 1985 so the December 1985 meteorology was used for the worst-case-day dispersion modeling. The 1984-86 period had the highest 3-year PM₁₀ average concentration since monitoring began so this period was used for the annual-average analysis; the most precise wind data was available during July 1985 to June 1986 and this 12-month period had average concentrations similar to the 1984-86 average so the annual-average dispersion modeling was done with the July 1985 to June 1986 meteorology. The highest PM₁₀ concentrations were measured in the area between the Jackson County Courthouse at Oakdale/Main and McAndrews Road (monitors located near Oakdale/Main, Haven/Holly, Oak/Taft, and Welch/Jackson).

Analysis of the dispersion modeling results for 1985-86 and all of the available PM₁₀ air quality data from 1984-1986 indicates a 24-hour design value of 266 to 309 $\mu\text{g}/\text{m}^3$ (Oakdale/Main and Oak/Taft, respectively) and an annual average design value of 58 to 68 $\mu\text{g}/\text{m}^3$ (Oakdale/Main and Oak/Taft, respectively) depending on the location within the peak problem area. In addition to the peak impact site (Oak/Taft), the impact analysis is also summarized for the Courthouse site (Oakdale/Main) since most of the historical particulate data (20+ years) and chemical fingerprinting data (10+ years) has been collected at the Courthouse. These specific design values are based on the dispersion modeling results but they agree very closely with the actual ambient monitoring data at these sites.

Control strategies included in this plan have been designed to reduce 24-hour concentrations of PM₁₀ by at least 159 $\mu\text{g}/\text{m}^3$ (309-150 $\mu\text{g}/\text{m}^3$) and the annual average by at least 18 $\mu\text{g}/\text{m}^3$ (68-50 $\mu\text{g}/\text{m}^3$) by 1992.

Control measures adopted in this plan must be legally enforceable, demonstrated to be adequate to achieve the needed air quality improvements, and designed to attain the standards within the time frames provided by the Clean Air Act.

The principal means of achieving these air quality improvements within the 3-year period allowed by the Clean Air Act is through PM₁₀ emission reductions from woodstoves and fireplaces (RWC), the wood products industries, open burning of debris, and road dust. Additional reductions are expected from statewide efforts to reduce slash burning smoke.

Residential Wood Combustion Strategies

The residential woodsmoke reduction strategies are closely patterned after the December 1987 recommendations of the Jackson County Woodburning Task Force. Woodstove and fireplace emissions will be reduced by an expanded public information program, an areawide mandatory woodburning curtailment program (75% compliance rate needed to meet standards at the Courthouse, but 85% compliance rate needed to meet standards at Oak/Taft), the Oregon woodstove certification program, financial assistance programs for replacement of existing woodstoves with cleaner burning units and weatherization of homes, a ban on installation of non-certified woodstoves, and continued improvements in firewood seasoning and woodstove operation.

Wood Products Industry Strategies

Wood products industry emissions will be reduced by additional control requirements on veneer driers and large wood-fired boilers at plywood plants, more extensive source testing and continuous emission monitoring in order to maximize performance of pollution control equipment, and more restrictive emission offset requirements to insure a net air quality benefit from any new or expanded industries.

Open Burning Strategies

Open burning emissions will be reduced during the critical November to February period by local ordinances banning open burning during these months. Annual open burning emissions will be reduced by a year around ban within Medford and more restrictive ventilation criteria and shorter burn seasons in unincorporated areas of Jackson County and in Central Point.

Road Dust Strategies

Road dust emissions will be reduced by continuing programs to pave unpaved roads, to curb and gutter shoulders on paved roads, and to control mud and dirt trackout from industrial, construction and agricultural operations.

Other Strategies

Slash burning emissions will be reduced in western Oregon by about 20% between 1984 and the year 2000 as part of the Oregon Visibility Protection Plan. These emission reductions will further insure that background PM₁₀ concentrations will not increase in future years.

In addition, forestry slash burning impacts on the nonattainment area will be minimized through voluntary agreements among forest land managers. This program will help assure that forestry open burning does not adversely affect Medford-Ashland AQMA air quality on winter wood heating curtailment days.

Implementation of all of the elements of the overall PM₁₀ control strategy will require the efforts of residents and industries within the Medford-Ashland AQMA, Jackson County, the cities within the AQMA, Oregon Department of Environmental Quality, Oregon Department of Forestry, U.S. Forest Service and Bureau of Land Management.

Strategy Emission Reduction - 24 Hour Worst Case Day

Attainment of the 24-hour PM₁₀ standards by 1992 will require up to a 51% reduction in ambient PM₁₀ concentrations depending on the location within the AQMA. This reduction will be accomplished by the previously described strategies. The PM₁₀ impacts at the Jackson County Courthouse from the major source categories are compared in the following table for the 1985-86 base period and ~~the~~ 1992 ~~attainment-year~~. The PM₁₀ emissions and impacts are projected to be slightly lower in 1994 than in 1992. The PM₁₀ impacts are in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). (NC indicates No Change.)

Site: Jackson County Courthouse

<u>Source Category</u>	<u>24-Hour PM₁₀ Impact (µg/m³)</u>		<u>Change</u>
	<u>Worst Day</u>	<u>Worst Day</u>	
	<u>1985-86</u>	<u>1992</u>	
Residential woodsmoke	195.0	26.4	-86%
Wood products industry	29.2	20.3	-30%
Soil and road dust	27.6	27.6	NC
<u>Other</u>	<u>10.6</u>	<u>11.6</u>	+9%
Local sources	262.4	85.9	-67%
<u>Background</u>	<u>44.0</u>	<u>44.0</u>	NC
Total	306.4	129.9	-58%

<u>Source Category</u>	<u>Design Day</u>		<u>Change</u>
	<u>1985-86</u>	<u>1992</u>	
	Residential woodsmoke	156.2		23.1	-85%
Wood products industry	22.6	14.6	-35%
Soil and road dust	32.1	32.1	NC
<u>Other</u>	<u>11.6</u>	<u>12.6</u>	+9%
Local sources	222.5	82.4	-63%
<u>Background</u>	<u>44.0</u>	<u>44.0</u>	NC
Total	266.5	126.4	-53%

The Courthouse monitoring site is of special interest since it is the site of the longest historical particulate monitoring in the AQMA and it is located in the general area of highest particulate levels. However, the Oak and Taft monitoring site in Medford has recorded and projects slightly higher PM₁₀ levels which are summarized in the following table.

Site: Medford Oak and Taft

<u>Source Category</u>	<u>24-Hour PM₁₀ Impact (µg/m³)</u>		<u>Change</u>
	<u>Worst Day</u>	<u>Worst Day</u>	
	<u>1985-86</u>	<u>1992</u>	
Residential woodsmoke	182.2	24.5	-87%
Wood products industry	77.8	55.1	-26%
Soil and road dust	28.7	28.7	NC
<u>Other</u>	<u>9.5</u>	<u>10.3</u>	+9%
Local sources	298.2	118.6	-60%
<u>Background</u>	<u>44.0</u>	<u>44.0</u>	NC
Total	342.2	162.6	-52%

<u>Source Category</u>	<u>24-Hour PM₁₀ Impact ($\mu\text{g}/\text{m}^3$)</u>		<u>Change</u>
	<u>Design Day</u> <u>1985-86</u>	<u>Design Day</u> <u>1992</u>	
Residential woodsmoke	167.3	22.3	-87%
Wood products industry	58.8	42.0	-29%
Soil and road dust	29.8	29.8	NC
<u>Other</u>	<u>9.5</u>	<u>10.3</u>	+9%
Local sources	265.3	104.4	-61%
<u>Background</u>	<u>44.0</u>	<u>44.0</u>	NC
Total	309.3	148.4	-52%

These 24-hour PM₁₀ impacts represent the worst day and design day during the 1985-86 baseline period. The design value is based on the fourth highest day during a 3-year period. For the Oak/Taft site the modeled fourth highest day after implementation of the control strategy in 1992 is 148 $\mu\text{g}/\text{m}^3$ which would be in compliance with the 24-hour health standard of 150 $\mu\text{g}/\text{m}^3$.

Other areas of the AQMA had been measured in violation of the 24-hour or annual standards, notably the White City and Central Point areas, but the dispersion modeling also indicated compliance in those areas, with 1992 concentrations lower than at Oak/Taft.

Strategy Emission Reduction - Annual Average Case

Attainment of the annual average PM₁₀ standards by 1992 will require up to a 26% reduction in ambient PM₁₀ concentrations depending on the location within the AQMA. This reduction will be accomplished by the previously described strategies. The PM₁₀ impacts at the Jackson County Courthouse from the major source categories are compared in the following table for the 1985-86 base period and ~~the~~ 1992 ~~attainment-year~~. The PM₁₀ emissions and impacts are projected to be slightly lower in 1994 than in 1992. Again, the PM₁₀ impacts are in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$).

Site: Jackson County Courthouse

<u>Source Category</u>	<u>Annual PM₁₀ Impact ($\mu\text{g}/\text{m}^3$)</u>		<u>Change</u>
	<u>1985-86</u>	<u>1992</u>	
Residential woodsmoke	28.8	16.6	-42%
Wood products industry	7.2	4.3	-40%
Soil and road dust	6.9	6.9	NC
<u>Other</u>	<u>2.7</u>	<u>3.0</u>	+9%
Local sources	45.6	30.8	-32%
<u>Background</u>	<u>13.1</u>	<u>13.1</u>	NC
Total	58.7	43.9	-25%

The Oak and Taft monitoring site in Medford recorded slightly higher annual PM₁₀ levels than the Courthouse. The Oak and Taft PM₁₀ levels are summarized in the following table.

Site: Medford Oak and Taft

<u>Source Category</u>	<u>Annual PM₁₀ Impact ($\mu\text{g}/\text{m}^3$)</u>		<u>Change</u>
	<u>1985-86</u>	<u>1992</u>	
Residential woodsmoke	28.2	16.2	-43%
Wood products industry	17.9	11.3	-37%
Soil and road dust	6.6	6.6	NC
<u>Other</u>	<u>2.3</u>	<u>2.5</u>	+9%
Local sources	55.0	36.6	-33%
<u>Background</u>	<u>13.1</u>	<u>13.1</u>	NC
Total	68.1	49.7	-27%

The annual average PM₁₀ levels at both the Courthouse and Oak and Taft sites are projected to be in compliance with the annual PM₁₀ health standard of 50 $\mu\text{g}/\text{m}^3$ after implementation of the control strategy in 1992.

The dispersion modeling projected potential PM₁₀ problems in two other one-kilometer grids north of the Oak & Taft grid but the 1985 Medford particulate gradient study and the 1989 mobile nephelometer surveys indicated that PM₁₀ levels at the DeHague & Howard and McAndrews & Court sites were not as high as at the Oak & Taft site. The Department ~~will~~ conducted additional monitoring in the two potential problem grids ~~by 1991~~ during the 1990-91 winter season to determine the actual PM₁₀ concentrations ~~as the control strategy is implemented. If the ambient data confirms a nonattainment problem that the control strategy will not bring into attainment by 1992, then the control strategy will be modified as necessary to assure that attainment will be reached.~~ This monitoring confirmed that the potential problem grids had slightly lower overall PM₁₀ concentrations than the Oak & Taft/Welch & Jackson grid on which the control strategy is based.

Air Quality Standard Maintenance

Subsequent to attainment and by the year 2000, a net decrease in emissions is projected to occur as a result of continuation of the attainment strategies, offsetting increases in fugitive dust and transportation emissions. Both the 24-hour and annual standards are projected to be maintained to the year 2000 at which time worst case day PM₁₀ and the annual average PM₁₀ are projected to be 146 and 48 $\mu\text{g}/\text{m}^3$, respectively, at Oak and Taft.

Contingency Plan

The Clean Air Act requires that PM₁₀ control strategies include a contingency plan that would automatically go into effect if the area does not meet PM₁₀ standards by December 31, 1994. The Medford-Ashland contingency plan consists of residential woodburning, industrial, and open burning elements. The specific contingency plan elements that would go into effect, if the Medford-Ashland AQMA fails to meet PM₁₀ standards by the Clean Air Act deadline, include:

1. Backup authority for DEQ to implement residential woodburning curtailment programs where necessary to meet PM₁₀ standards;
2. Requirement for noncertified woodstove removal upon home sale;
3. New industrial Reasonably Available Control Technology (RACT) and Best Available Control Technology (BACT) requirements;
4. Feasibility study on dual fueling of large wood-fired boilers, with alternate fuel to be used during woodburning curtailment periods; and
5. Open burning ban during November through February.

Enforceability

The Clean Air Act requires SIP control strategies to be enforceable. The necessary State rules and local ordinances have been adopted and are included in the appendix for this plan. The 1984 Oregon woodstove certification program and the 1989 industrial rules have been submitted to EPA previously.

Several existing strategy elements to reduce residential woodsmoke will be continued or expanded including: comprehensive public information programs on proper woodstove operation, firewood seasoning, and home weatherization; financial assistance programs to replace existing woodstoves with cleaner burning units and provide home weatherization (CLEAR, SOLVE and ACCESS programs); voluntary firewood moisture certification programs; daily woodburning advisory program (for areas outside the critical PM₁₀ control area); and the woodstove certification program.

The major new residential wood combustion strategies in this plan are the mandatory woodburning curtailment programs and the bans on installation of non-certified woodstoves. The mandatory curtailment programs adopted by the ~~{cities}~~ City of Medford ~~{and Central Point}~~ and Jackson County, ~~{and}~~ the ban on installation of non-certified stoves adopted by the City of Ashland and Jackson County, and the Oregon Administrative Rules (OARs) to implement House Bill 2175 (1991 Legislature) are included in the appendix. The OARs provide for enforcement of a woodburning curtailment program in Central Point if the City does not replace the ordinance repealed by voters in November 1990. Also included are

local ordinances on opacity limits, what can be burned in woodstoves, and sale of seasoned firewood.

The new industrial strategies are more stringent control requirements on veneer dryers and large wood-fired boilers, more extensive source testing and continuous emission monitoring, and more restrictive emission offset requirements for new or expanded industries. These rules were adopted by the Environmental Quality Commission on September 8, 1989, and are included in the appendix. The new industrial rules are in addition to the industrial rules for the Medford-Ashland area adopted in 1978 and 1983.

The OARs to implement the residential woodburning, industrial and open burning elements of the contingency plan are included in the appendix.

The current local ordinances and OARs that regulate open burning and trackout are included in the appendix. Also included is a progress report on paving of unpaved roads and curbing of shoulders on paved roads within the city of Medford.

4.14.0.1 Introduction (Revised)

On July 1, 1987, the U.S. Environmental Protection Agency (EPA) promulgated new federal ambient air quality standards for particles less than or equal to 10 micrometers in aerodynamic diameter (PM₁₀) to replace the Total Suspended Particulate (TSP) standard.¹ The standard became effective 30 days later on July 31, 1987. On August 7, 1987, EPA classified the Medford-Ashland Air Quality Maintenance Area as a Group I PM₁₀ nonattainment area (52 FR 29383). Group I areas are those which have a greater than 95 percent probability of exceeding the PM₁₀ National Ambient Air Quality Standards (NAAQS). Air monitoring has shown that air quality within the Medford-Ashland AQMA exceeds the PM₁₀ standards (NAAQS).

~~{Section 110 of the}~~ The Federal Clean Air Act requires States to adopt and submit plans (State Implementation Plans or SIPs) to EPA ~~{within nine months after the effective date of the standard}~~ by November 15, 1991. ~~{The Clean Air Act allows EPA four months to approve or disapprove the plan.}~~ The plan must provide for attainment of the standard ~~{as expeditiously as practicable but no later than three years from the date of EPA approval of the SIP.}~~ Hence, ~~attainment theoretically must be reached by September 17, 1991}~~ by December 31, 1994.

The Air Quality Division of the Department of Environmental Quality (subsequently referred to as the Department) has developed this plan in consultation with officials of Jackson County, the cities within the Medford-Ashland AQMA, the Oregon Departments of Transportation and Forestry, and EPA. The plan was prepared in accordance with the regulations and requirements of the Federal Clean Air Act and the EPA. The Department believes that the PM₁₀ plan can achieve attainment of the NAAQS within the time frame required by the Act and maintain attainment at least through the year 2000.

4.14.0.2 SIP Overview (Revised)

This revision to the State Implementation Plan (SIP) has ~~{five}~~ six sections. Section 4.14.1 provides a description of PM₁₀ ambient air quality in Medford-Ashland AQMA; Section 4.14.2 describes the PM₁₀ air quality problem within the Medford-Ashland AQMA; Section 4.14.3 describes emission reductions needed to attain NAAQS; Section 4.14.4 describes implementation of the control strategies; ~~{and}~~ Section 4.14.5 describes public involvement; and Section 4.14.6 is an addendum that includes a contingency plan and addresses other requirements of the 1990 Clean Air Act.

¹A micrometer (μm) is a unit of length equal to about 1/25,000 of an inch. For comparison, the thickness of a human hair is about 100 to 200 micrometers.

4.14.6 Addendum (New Section)

4.14.6.1 Purpose of the Addendum

The Medford-Ashland PM₁₀ Control Strategy was adopted by the Environmental Quality Commission (EQC) on January 31, 1991. At the time of adoption it was recognized that additional elements would be needed by November 15, 1991, to address the repeal of the Central Point residential woodburning ordinance and to meet new requirements of the Clean Air Act passed by Congress and signed by the President on November 15, 1990. This addendum:

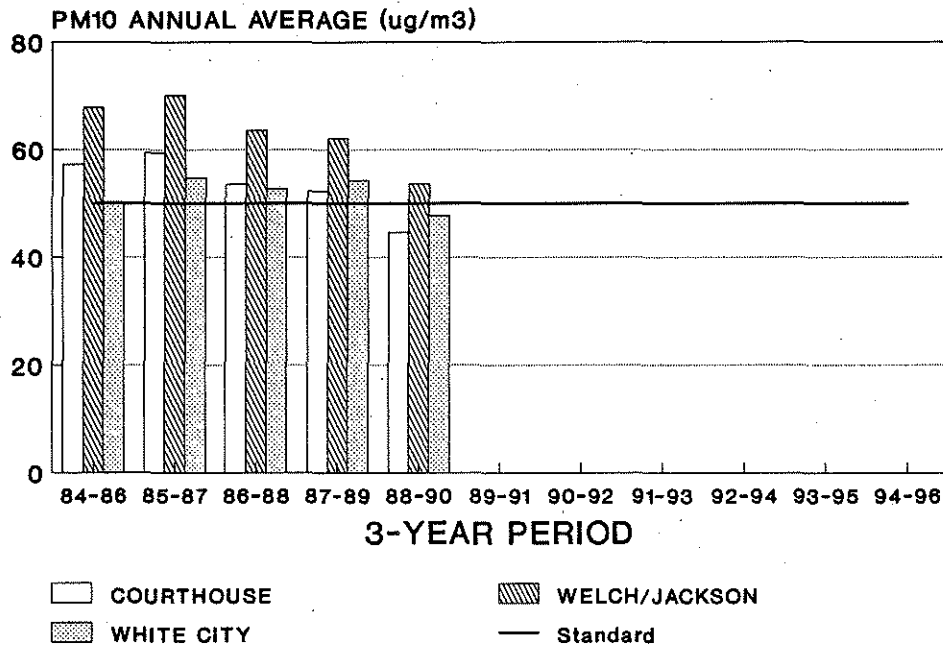
1. Reviews the results of recent and expanded PM₁₀ monitoring in the Medford-Ashland Air Quality Maintenance Area (AQMA);
2. Identifies additional control measures, including a mandatory woodburning curtailment program for the Central Point area, to insure that the strategy is adequate for attainment of PM₁₀ standards on schedule;
3. Includes commitments for a contingency plan that would automatically go into effect if PM₁₀ standards are not achieved by the deadline of the Clean Air Act;
4. Evaluates the PM₁₀ control strategy against Reasonably Available Control Measures (RACM) and Best Available Control Measures (BACM);
5. Identifies the lead agency and resource commitments to insure that the control strategy will be implemented and enforced;
6. Describes provisions for reporting reasonable further progress, revising the plan if necessary, and reviewing and permitting new sources; and
7. Updates the public involvement process, including a public hearing and intergovernmental review on this addendum.

The Executive Summary and Introduction of the overall control strategy have been revised to discuss the new Clean Air Act requirements and the elements of this addendum.

4.14.6.2 Ambient Air Quality Update

Annual average and peak day PM₁₀ concentrations have improved between the baseline period (1984-86) and the most recent three year period (1988-90), as shown in Figures 4.14.6-1 and 4.14.6-2. Annual average PM₁₀ concentrations at Welch & Jackson were slightly above the annual average PM₁₀ standard during 1988-90, but annual average PM₁₀ concentrations at the Courthouse and in White City were in compliance with the annual average standard during this period. As expected, the 24-hour standard continues to be the more difficult standard to attain.

MEDFORD-WHITE CITY PM10 SUMMARY



MEDFORD-ASHLAND PM10 SUMMARY MONTHLY AVERAGES DURING 1988-90

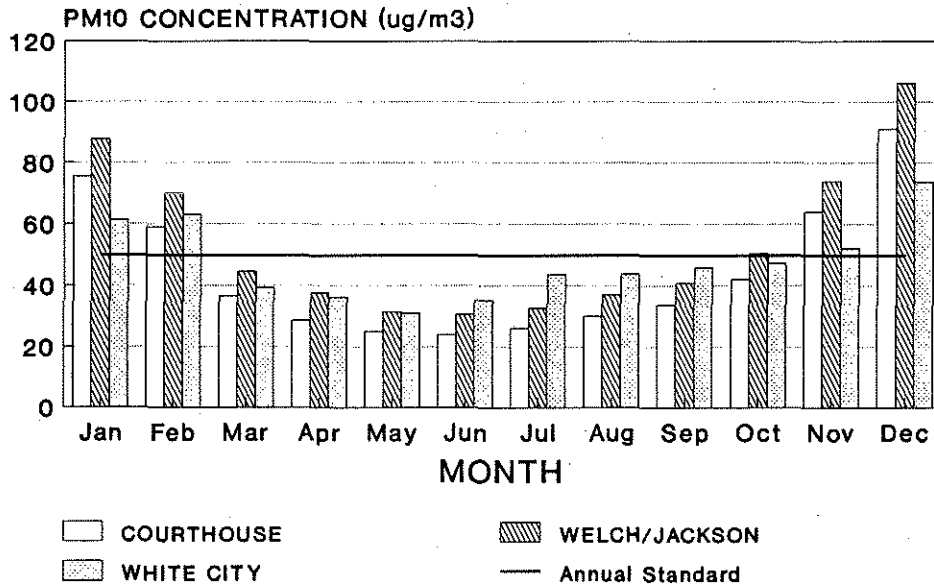
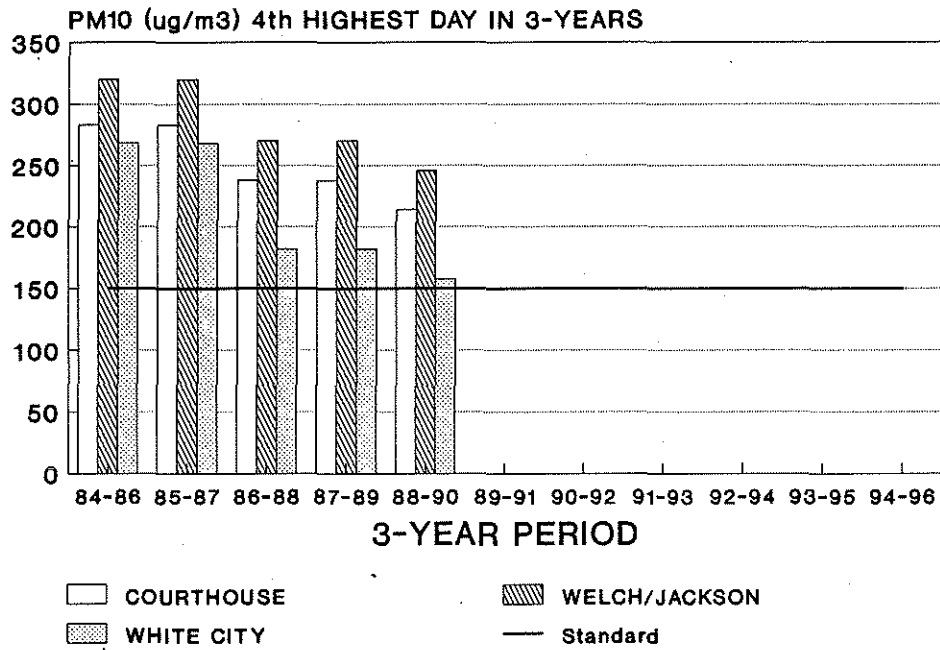


Figure 4.14.6-1: Ambient PM₁₀ Trends.

MEDFORD-WHITE CITY PM10 SUMMARY



MEDFORD-WHITE CITY PM10 SUMMARY

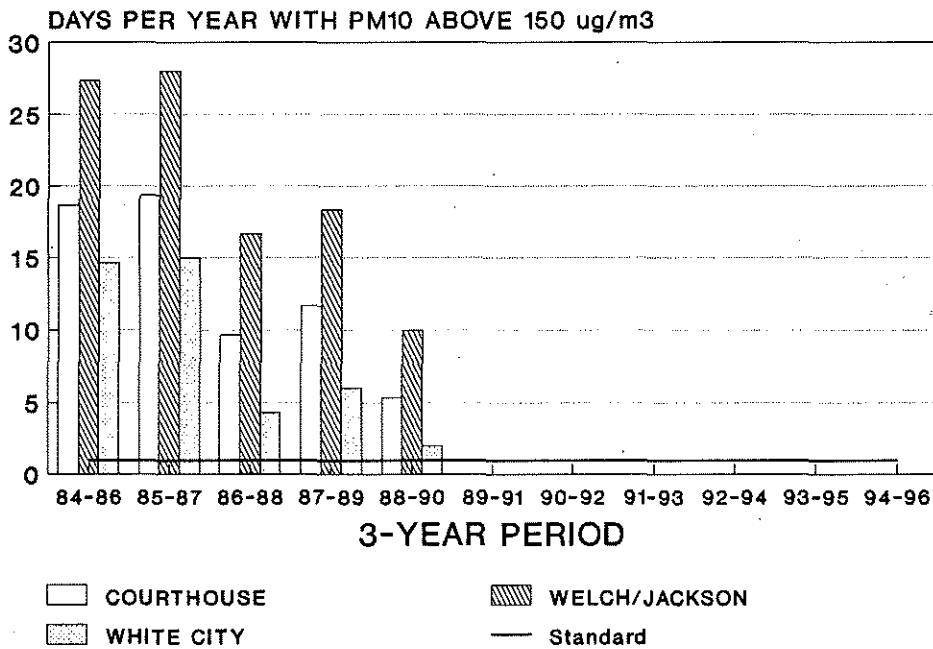


Figure 4.14.6-2: Ambient PM₁₀ Trends.

PM₁₀ concentrations did not fully meet the annual or 24-hour PM₁₀ health standards during 1988-90 since the control strategy was not yet fully implemented. Completion of the strategy (remaining industrial control measures, mandatory Central Point residential woodburning curtailment program, sunsetting of some of the Medford and Jackson County sole-source woodstove exemptions, continued replacement of existing woodstoves with cleaner burning units, etc.) is projected to result in attainment of PM₁₀ health standards before December 31, 1994.

Expanded monitoring during the 1990-91 winter season indicated that elevated PM₁₀ concentrations occur throughout the Medford-Central Point-White City area during air stagnation episodes; on a given day, the peak concentration can occur in any one of these three subareas. The highest overall PM₁₀ concentrations were measured in the Welch & Jackson (Oak & Taft) grid in Medford, confirming that site as the critical (design value) site for the PM₁₀ control strategy. Examples of PM₁₀ isopleths during air stagnation advisories on three different days in both December, 1989, and January, 1991 are shown in Figures 4.14.6-3 to 4.14.6-8.

The Dodge Road background site was re-established in December 1990. The background PM₁₀ concentrations measured thus far appear to be similar to those measured during the 1984-86 baseline period.

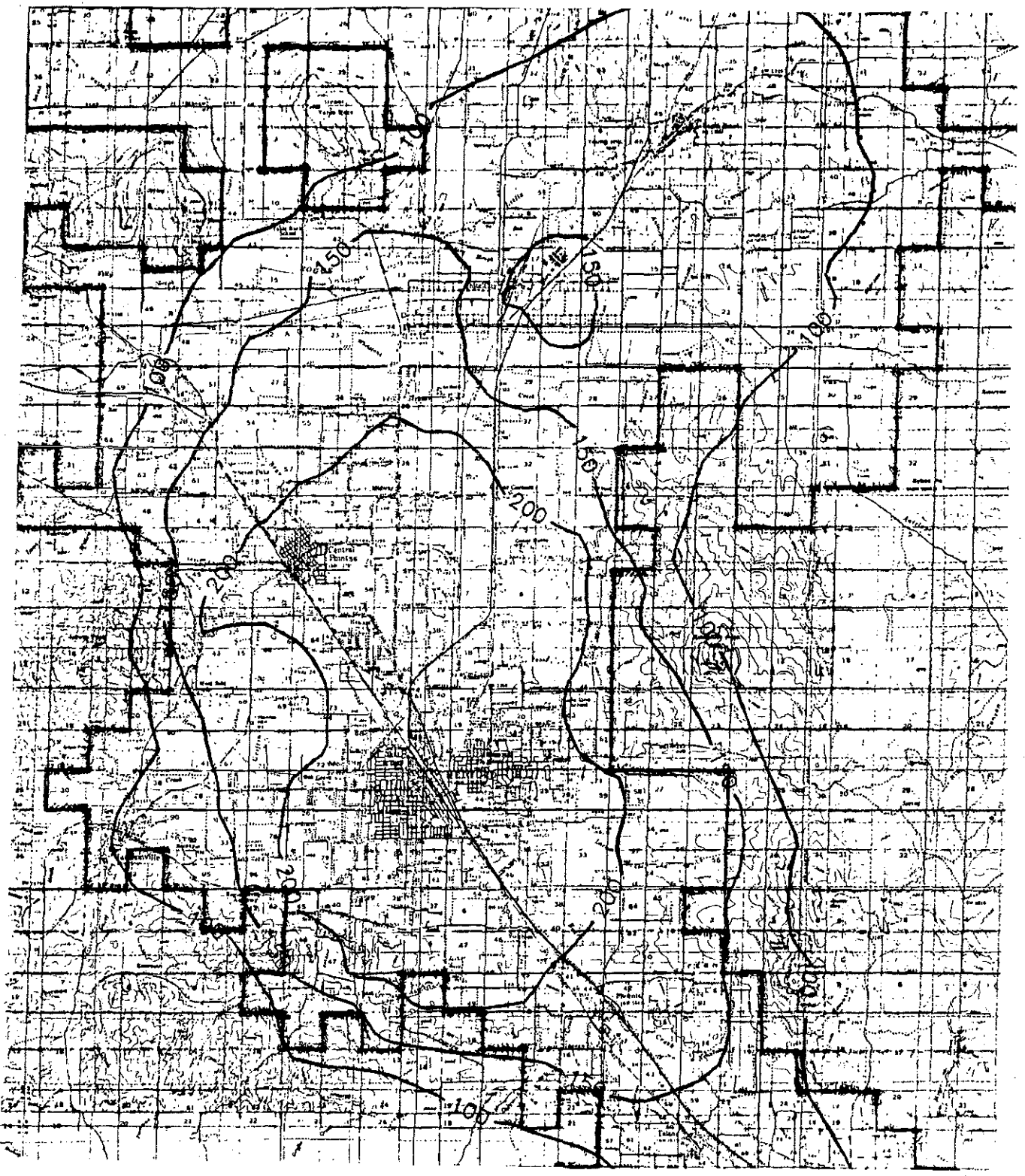


Figure 4.14.6-3: PM₁₀ Isopleths, December 21, 1989.



Figure 4.14.6-4: PM₁₀ Isopleths, December 22, 1989.

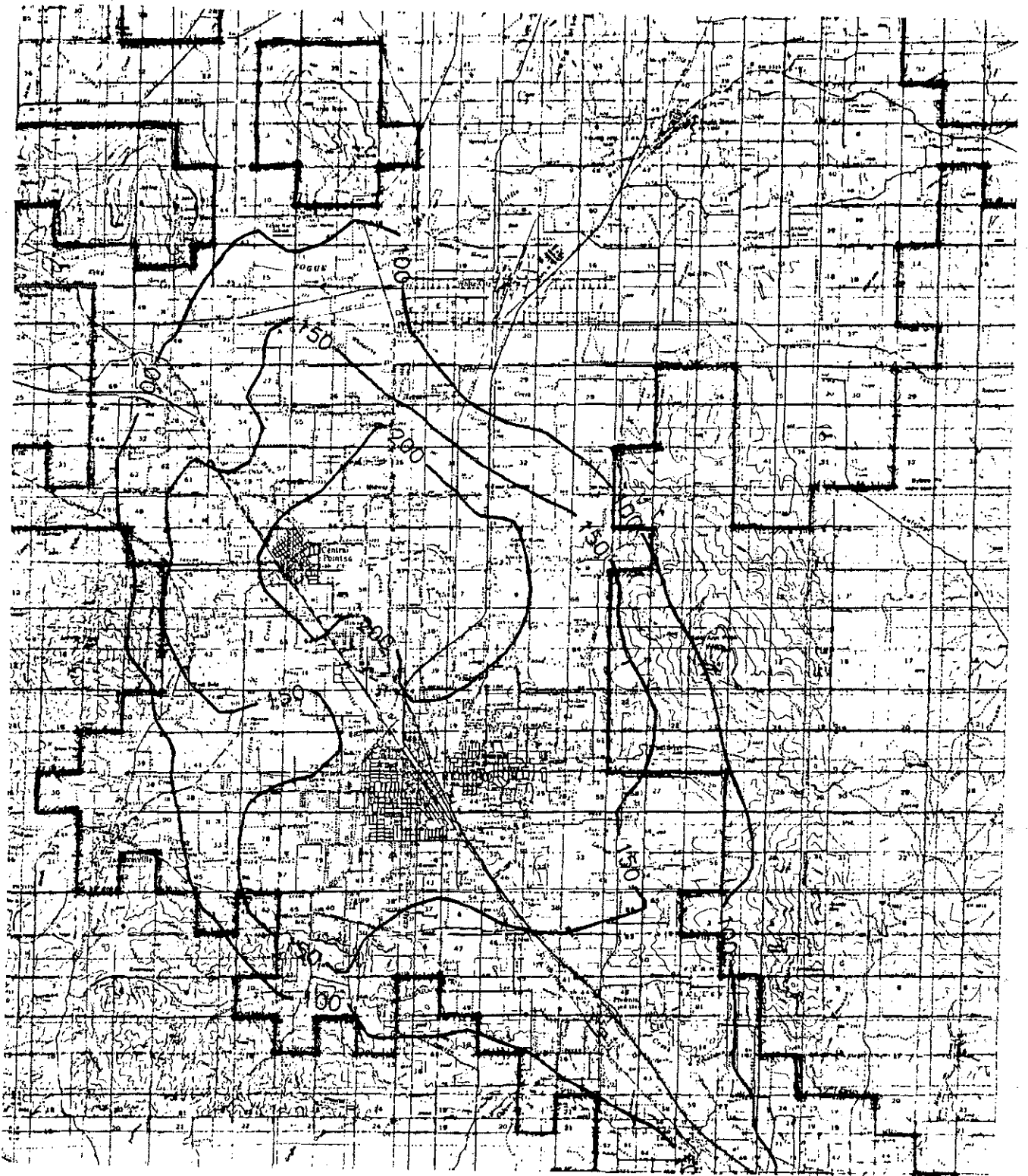


Figure 4.14.6-5: PM₁₀ Isopleths, December 24, 1989.

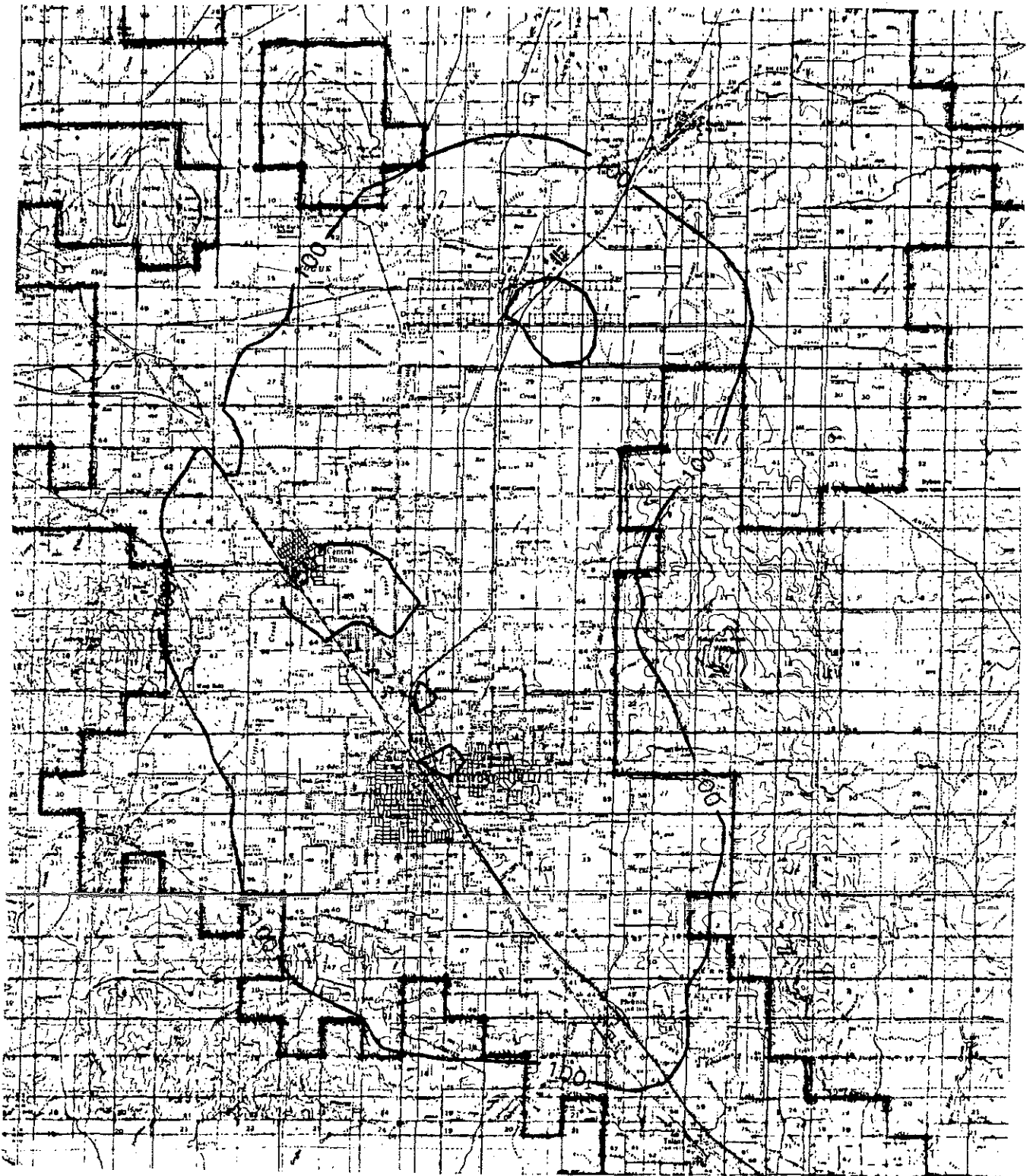


Figure 4.14.6-6: PM₁₀ Isopleths, January 2, 1991.

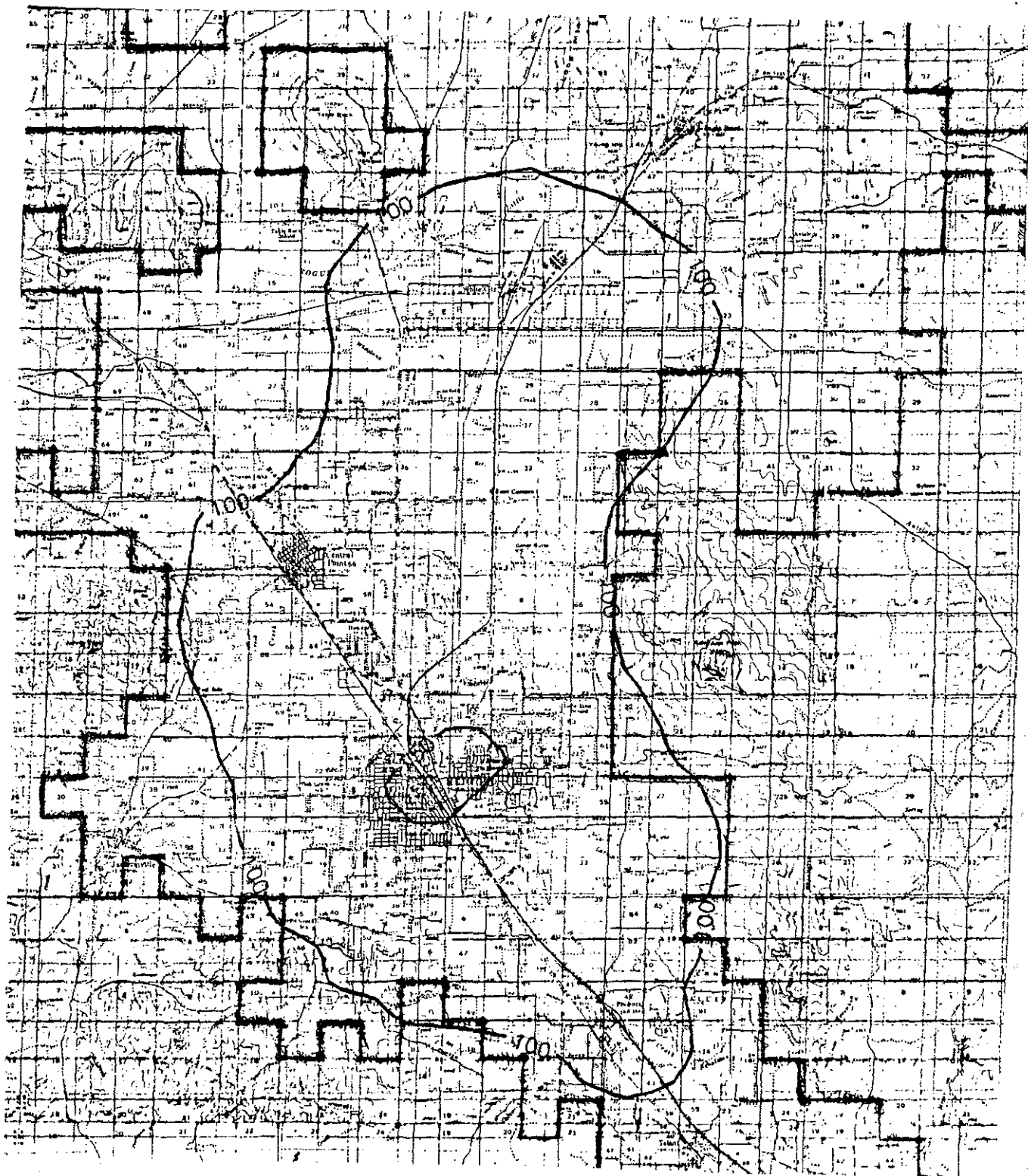


Figure 4.14.6-7: PM₁₀ Isopleths, January 4, 1991.

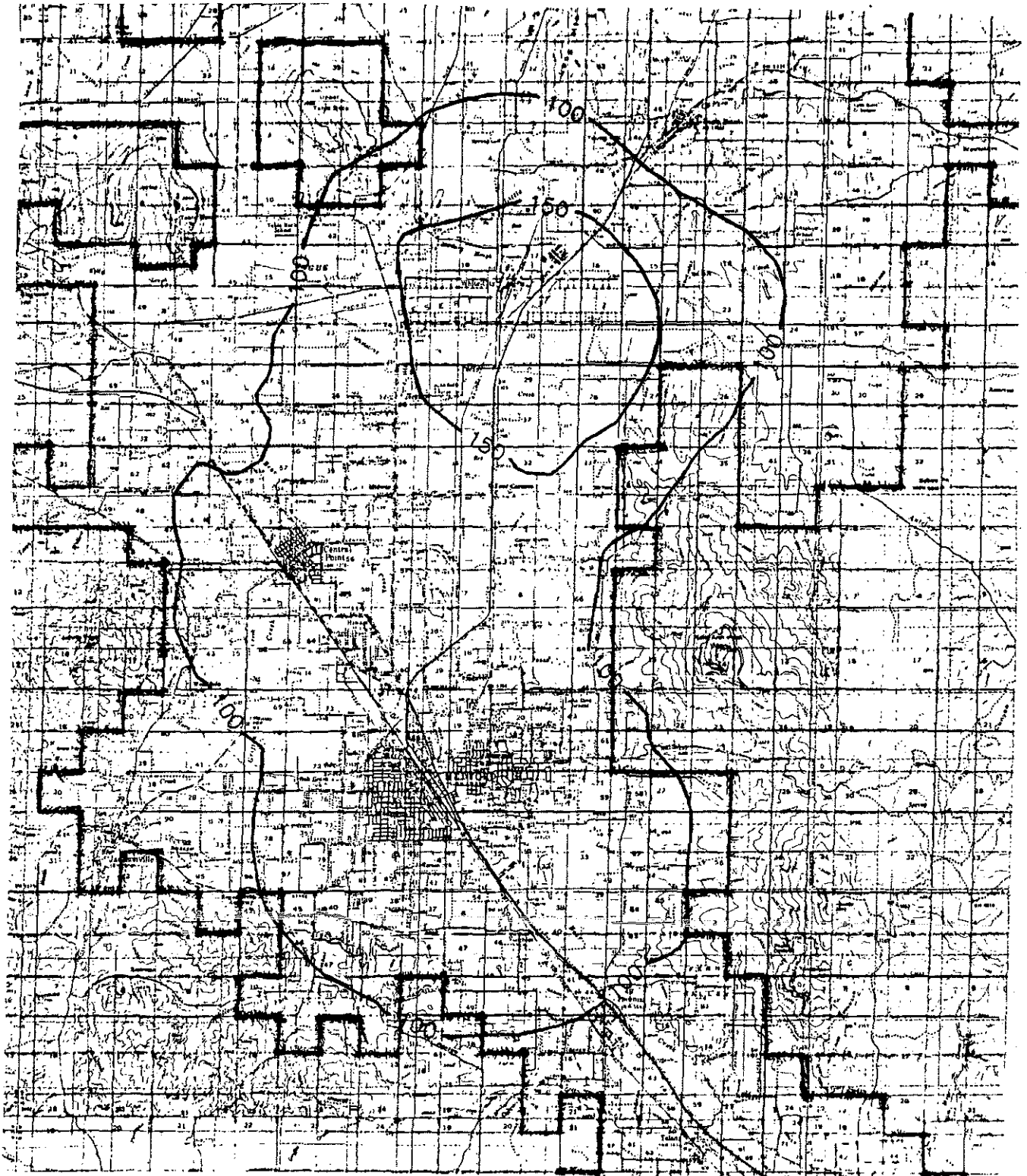


Figure 4.14.6-8: PM₁₀ Isopleths, January 5, 1991.

4.14.6.3 Additional Control Measures in Attainment Strategy

The following additional control measures are included in the Medford-Ashland PM₁₀ attainment strategy:

1. Mandatory residential woodburning curtailment program within the City of Central Point;
2. Ban on installation or sale of noncertified woodstoves in Oregon;
3. More restrictive ventilation index criteria for open burning within the Rogue Basin Open Burning Control Area; and
4. Forestry slash burning restrictions in the Smoke Management Plan.

Residential Woodburning Curtailment

The 1991 Oregon Legislature authorized the Environmental Quality Commission to adopt by rule a mandatory (enforceable) woodburning curtailment program which would be applicable to any area that failed to adopt or implement such a program, if necessary to meet PM₁₀ standards under the Clean Air Act. The curtailment program would apply to woodstoves, fireplaces, and other woodheating devices. The State curtailment program must include at a minimum:

- o A provision for a two stage curtailment program based on the severity of the projected air quality conditions;
- o A provision to exempt all Oregon certified woodstoves from the first stage of curtailment;
- o A provision for low income exemptions;
- o A provisional exemption for sole source woodburning households;
- o An exemption for pelletstoves;
- o A provision for the Department to defer the operation and enforcement of the curtailment program at such time as the local government or regional authority has adopted and is adequately implementing the required curtailment program.

Ambient monitoring of PM₁₀ concentrations and the control strategy attainment analysis confirm that a mandatory curtailment program is needed in Central Point. The Central Point City Council adopted a mandatory curtailment ordinance in December, 1989, but this ordinance was repealed by voters in November, 1990. The Department will implement a mandatory curtailment program in Central Point under the authority of OAR 340-34-150 to -170 unless the City of Central Point adopts and implements an equivalent program as described in OAR 340-34-175.

Installation or Sale of Used Noncertified Woodstoves

The 1991 legislature enacted a ban on the sale and installation of noncertified used woodstoves. As of the effective date of HB2175 (November 5, 1991) no person shall advertise for sale, offer to sell or sell, a used woodstove that was not certified for sale as

new on or after July 1, 1986, under the Oregon Woodstove Certification Program.

Additionally, HB2175 has charged the State Building Codes Agency to amend their administrative rules, prohibiting the installation of noncertified used woodstoves.

Ventilation Criteria for Open Burning

The ventilation index criteria for open burning within the Rogue Basin Open Burning Open Burning Control Area has been revised in OAR 340-23-043 from a 200 index to the more restrictive 400 index. Based on 1983-90 ventilation index data, this will increase the number of "no burn" days from 73 to 149 on an annual basis and from 54 to 83 on a November-February (four-month) seasonal basis. (The actual number of "no burn" days is greater than indicated due to fire safety criteria and seasonal open burning bans in local ordinances.)

Forestry Slash Burning

PM₁₀ emissions from forestry slash burning, both because of the magnitude of the emissions and the proximity of the burning to the nonattainment area, can potentially have a significant impact on air quality within the Medford-Ashland AQMA. Forestry burning is regulated under Oregon law (ORS 477.515) which requires that the State Forester and the Department of Environmental Quality jointly approve a plan to manage smoke from slash burning in areas they designate.

By statute, the Oregon Department of Forestry (ODOF) is responsible for the administration of rules (OAR 629-43-043) and written procedures to assure the protection of air quality. Mandatory, daily burning instructions are issued by ODOF within the Smoke Management Plan's Restricted Area which covers western Oregon (crest of the Cascades west) and the Deschutes National Forest. The objective of the Plan is to prevent smoke resulting from burning on forest lands from being carried to or accumulating in designated areas. The Medford-Ashland AQMA has been set aside as one of these designated areas. The provisions of this program exceed EPA's requirements for Reasonably Available Control Measures (RACM) for forestry smoke management programs.

Provisions included in the Oregon Visibility Protection Plan (OAR 340-20-047, Section 5.2) establish a goal of a 22% reduction in slash burning emissions (relative to 1982-84 levels) by the year 2000. Emission information received from ODOF suggests that this goal has nearly been achieved. Additional major reductions in slash burning emissions are expected to occur within the coming years due to reductions in timber harvest levels on National Forest lands in Western Oregon. As a result, contributions from slash burning to PM₁₀ background air quality and direct impacts of

smoke from forestry burning are expected to decline further in the near future.

While the current Smoke Management Plan meets Clean Air Act requirements, the Department will continue to pursue additional forestry slash burning control measures with the Oregon Department of Forestry (ODOF) which may include establishment of a mandatory Special Protection Zone within which special restrictions would apply during the winter months when woodburning curtailment programs are in effect and violations of NAAQS are most likely. These restrictions may include surveillance and mopup of pile burning within the Zone and restrictions on all burning on woodburning curtailment days within the AQMA. Also under discussion is a contingency measure which would prohibit slash burning within the Zone during the winter months should the Medford-Ashland nonattainment area fail to attain the NAAQS within the deadlines established under the Act and slash burning smoke is implicated as a significant contributor.

Public hearings on revisions to the Smoke Management Plan and adoption of rule changes by the Environmental Quality Commission and the Oregon Board of Forestry is expected in the Fall of 1991. As noted above, the specific revisions to the Plan have yet to be decided.

4.14.6.4 Reasonably Available Control Measures (RACM/RACT) and Best Available Control Measures (BACM/BACT)

The Clean Air Act requires that PM₁₀ control strategies include Reasonably Available Control Measures (RACM). EPA guidance lists control measures that are considered to be RACM and indicates that listed RACM measures must be included in the attainment plan if any of those measures are needed to demonstrate attainment. Otherwise, RACM is to be included in the contingency plan for all significant source categories contributing to PM₁₀ violations. Individual source categories may be excluded from meeting RACM requirements if any such sources do not contribute significantly to the PM₁₀ problem. Also, a specific RACM may be excluded if analysis indicates that the measure would be infeasible to implement. RACM for industrial point sources is referred to as Reasonably Available Control Technology (RACT).

For an area that fails to meet PM₁₀ standards by December 31, 1994, the Clean Air Act requires that the area be redesignated as a "serious" nonattainment area and that a revised PM₁₀ control strategy include additional control measures. EPA guidance indicates Best Available Control Measures (BACM) must be included for all significant source categories contributing to PM₁₀ violations. BACM for industrial point sources is referred to as Best Available Control Technology (BACT).

The Medford-Ashland PM₁₀ control strategy (the combination of the attainment strategy and contingency plan) satisfies the RACM requirements for residential woodburning, fugitive dust and prescribed burning and should satisfy the RACT and BACT requirements for industrial point sources. EPA is scheduled to provide BACM guidance on residential woodburning, fugitive dust and prescribed burning by May 15, 1992. It is anticipated that the Medford-Ashland PM₁₀ control strategy will satisfy the BACM requirements for area sources.

Reasonably Available Control Measures (RACM) for Urban Fugitive Dust, Residential Wood Combustion and Prescribed Burning are defined by the EPA's April 2, 1991, Memorandum on PM₁₀ Moderate Area SIP Guidance. Further guidance is contained in EPA-450/3-88-008 (September, 1988), Control of Open Fugitive Dust Sources and EPA-450/2-89-015 (September, 1989), Guidance Document for Residential Wood Combustion Control Measures.

Urban Fugitive Dust RACM

EPA guidance requires that the following fugitive dust RACM elements be included in the PM₁₀ SIPs if the source is a significant contributor to PM₁₀ nonattainment and it is economically and technologically feasible to control:

- (1) Pave, vegetate or chemically stabilize access points where unpaved traffic surfaces adjoin paved roads;
- (2) Require dust control plans for construction or land clearing projects;
- (3) Require haul trucks to be covered;
- (4) Provide for traffic rerouting or rapid clean up of temporary (and not readily preventable) sources of dust on paved roads (water erosion runoff, mud/dirt carryout areas, material spills, skid control sand). Delineate who is responsible for clean up;
- (5) Prohibit permanent unpaved haul roads, and parking or staging areas at commercial, municipal, or industrial facilities;
- (6) Develop traffic reduction plans for unpaved roads using speed bumps, low speed limits, etc. to encourage use of other (paved) roads;
- (7) Limit use of recreational vehicles on open land (e.g., confine operations to specific areas, require use permits, outright ban);
- (8) Require improved material specification for and reduction of usage of skid control sand and salt (e.g., require use of coarse, nonfriable material during snow and ice season);
- (9) Require curbing and pave or stabilize (chemically or with vegetation) shoulders of paved roads;
- (10) Pave or chemically stabilize unpaved roads;
- (11) Pave, vegetate, or chemically stabilize unpaved parking areas;
- (12) Require dust control measures for material storage piles;
- (13) Provide for storm water drainage to prevent water erosion onto paved roads;
- (14) Require revegetation, chemical stabilization, or other abatement of wind erodible soil, including lands subjected to water mining, abandoned farms, and abandoned

construction sites; and (15) Rely upon the soil conservation requirements (e.g., conservation plans, conservation reserve) of the Food Security Act to reduce emissions from agricultural operations.

Fugitive dust control measures that have already been adopted by rule are found in OAR 340-21-050 to -060. These rules apply within the Rogue Basin (which includes the Medford-Ashland AQMA) and other special control areas. These rules implement the following fugitive dust RACM measures:

<u>RACM Element</u>	<u>OAR 340-21-060</u>
1	(2) (a)
2, 10, 11	(2) (b)
3	(2) (f)
4	(2) (g)
12	(2) (c)

In addition, local programs and ordinances in the Medford-Ashland AQMA require implementation of RACM elements (4) (trackout) and (8) (winter road sanding).

Residential Wood Combustion RACM

EPA guidance requires that the state PM₁₀ SIPs include strategies from each of the following four RACM measures:

1. Establish an episode curtailment program, including: a curtailment plan; a communication strategy to implement the plan; a surveillance plan (e.g., "windshield" survey, opacity trigger); and enforcement provisions including procedures, penalties, and exemptions). A voluntary program will be deemed reasonable if the area demonstrates attainment;

The Medford, Jackson County and Central Point mandatory curtailment programs fulfill this requirement. Enforcement procedures, penalties and exemptions are found in the local ordinances and OAR 340-34-150;

2. Establish a public information program to inform and educate citizens about stove sizing, installation, proper operation and maintenance, general health risks of wood smoke, new technology stoves, and alternatives to woodheating;

The public education programs operated by Jackson County, cities within the AQMA, and the Department provide comprehensive information on each of the elements of this RACM measure;

3. Encourage improved performance of woodburning devices by:

- (a) Establishing a program to identify, through opacity observation, deficiencies in stove operation and maintenance. (Under such a program, advice and assistance should be provided to the identified households to help reduce visible emissions from their devices);
- (b) Providing voluntary dryness certification programs for dealers and/or making free or inexpensive wood moisture checks available to burners;
- (c) Evaluating and encouraging, as appropriate, the accelerated changeover of existing devices to new source performance standards or other new technology stoves (e.g., hybrid designs, pelletstoves) by such approaches as subsidized stove purchases tax credits or other incentives.

The curtailment surveillance programs are used to assess compliance rates and to identify homeowners that are operating woodstoves with excessive emissions. Jackson County and Ashland implement opacity limits. In these and other areas, information packets are distributed to households with excessive smoke.

The Jackson County program includes a voluntary cordwood certification program implemented through local fire districts.

Accelerated changeover is encouraged through financial assistance Project CLEAR and the SOLVE Program.

4. Provide inducements that would lead to reductions in the stove and fireplace population (or use) by:

- (a) Encouraging a reduction in the number of woodburning devices (i.e., removing or disabling the devices) through tax credits or other incentives;
- (b) Discouraging the resale of used stoves through taxes, fees or other incentives;
- (c) Discouraging the availability of free (or very inexpensive) firewood by increasing cutting fees or limiting the cutting season; or
- (d) Slowing the growth of woodburning devices in new housing units by taxes, installation permit fees, or other disincentives.

Sole-source exemptions in the curtailment programs, if not also low-income, are scheduled for sunseting. OAR 340 Division 34 includes, as a contingency measure, removal of noncertified stoves upon home sale.

Jackson County and Medford ordinances ban the installation of noncertified woodstoves. OAR 340 Division 34 includes a ban on the sale of used woodstoves.

Prescribed Burning RACM

EPA guidance requires that RACM measures from prescribed burning (slash burning) be included where it is shown that prescribed burning is or does contribute significantly to PM₁₀ exceedances within the nonattainment area. The guidance specifies that such a program must include: (1) smoke dispersion forecasts based (at minimum) on National Weather Service data; (2) a process for preparation and approval of burn plans; (3) availability of training programs for burners; (4) a public information program; (5) provisions for surveillance and enforcement of any mandatory requirements; (6) development of emission inventories; and (7) State oversight of the smoke management programs.

Oregon's forestry smoke management program administered by the Oregon Department of Forestry (ODOF) exceeds all of the above RACM requirements for the nonattainment area within Western Oregon. Smoke dispersion forecasts are issued daily by ODOF's smoke management center are based on NWS and local weather data. The program requires the preparation and approval of burn plans prior to ignition. Training is provided each year by ODOF staff to all burners. For Federal employees, this training is supplemented by training programs offered by the US Forest Service, the Bureau of Land Management and the National Park Service. ODOF and the Federal agencies all offer information on their programs to the public. Air monitoring surveillance is provided through the Department's programs and through aircraft plume tracking conducted by those conducting the burning. The program is enforced by ODOF Forest Practices foresters located in offices throughout the State. Emission inventories are developed in cooperation with ODOF using state of the art fuel consumption models. The Department oversees ODOF's program through periodic reviews and through ORS 477.515 which requires that the Director of the Department approve the program.

4.14.6.5 Contingency Plan Commitments

The Clean Air Act requires that the State Implementation Plan include contingency measures for significant sources of PM₁₀. These measures are to take effect without any further action by the State if the area fails to attain the PM₁₀ standard by the attainment date required by the Act. Accordingly, the following measures are included as contingency measures which will only take effect upon publication by EPA in the Federal Register that the area has failed to attain the PM₁₀ air quality standard by the required attainment date. Depending on the effectiveness of the control strategies, EPA could make this determination in 1994 or subsequent years.

The contingency plan consists of residential woodburning, industrial, and open burning elements. The specific contingency plan elements that would go into effect, if the Medford-Ashland AQMA fails to meet PM₁₀ standards by the Clean Air Act deadline, include:

1. Backup authority for DEQ to implement residential woodburning curtailment programs where necessary to meet PM₁₀ standards;
2. Requirement for noncertified woodstove removal upon home sale;
3. New industrial RACT/BACT requirements;
4. Feasibility study on dual fueling of large wood-fired boilers, with alternate fuel to be used during woodburning curtailment periods; and
5. Open burning ban during November through February.

Residential Woodburning Curtailment

As discussed under Section 4.14.6.3, the 1991 Oregon Legislature authorized the Environmental Quality Commission to adopt by rule a mandatory woodburning curtailment program which would be applicable to any area that failed to adopt or implement such a program, if necessary to meet PM₁₀ standards under the Clean Air Act.

Noncertified Woodstove Removal Upon Home Sale

HB2175, passed by the 1991 Oregon Legislature, requires that after December 31, 1994, all noncertified woodstoves, except antique and cookstoves, be removed and destroyed upon sale of a home in any PM₁₀ nonattainment area that does not meet PM₁₀ standards by that date. This requirement would increase the current normal replacement rate of noncertified stoves by 3-5% per year.

Industrial RACT/BACT Requirements

The Industrial Contingency Plan is adopted as OAR 340-21-200 to - 250. The industrial contingency elements satisfy both the RACT and BACT requirements. In most cases, the Medford-Ashland industrial rules in OAR 340 Division 30 are equivalent to the Industrial Contingency Plan. The few exceptions are:

1. Air conveying systems with particulate emissions of three or more tons per year would be required to be baghouse-controlled (98.5% control efficiency); the Division 30 rules currently require baghouse-control on air conveying systems with particulate emissions of ten tons or more per year;
2. The charcoal producing plant particulate emission limit would be reduced to five pounds per ton of char produced, from the existing limit of ten pounds per ton of char produced;

3. A feasibility study (adequacy of wintertime natural gas supply, modification costs and technical need/feasibility) on the dual-fueling of all large wood-fired boilers in the Medford-Ashland AQMA would be conducted. Implementation of this measure is dependent on the scientifically defensible need for such a program.

Seasonal Ban on Open Burning

If the Medford-Ashland AQMA fails to meet PM₁₀ standards by the Clean Air Act deadline, all open burning will be prohibited by OAR 340-23-090 within the Rogue Basin Open Burning Control Area during November, December, January, and February unless specifically authorized by letter permit pursuant to 340-23-100.

Seasonal Restrictions on Slash Burning

Additional forestry slash burning measures, while not required by the Clean Air Act, are being discussed with the Oregon Department of Forestry which may include establishment of a mandatory Special Protection Zone within which special restrictions would apply during the winter months when woodburning curtailment programs are in effect and violations of NAAQS are most likely. These restrictions may include a contingency measure which would prohibit slash burning within the Zone during the winter months should the Medford-Ashland nonattainment area fail to attain the NAAQS within the deadlines established under the Act and slash burning smoke is implicated as a significant contributor.

Public hearings on revisions to the Smoke Management Plan and adoption of rule changes by the Environmental Quality Commission and the Oregon Board of Forestry is expected in the Fall of 1991. As noted above, the specific revisions to the Plan have yet to be decided.

Emission Reductions From Contingency Measures

Woodstove emissions would be reduced an additional 160 tons per year by the year 2000 through the contingency plan. Industrial emissions would be reduced an additional 86 tons per year through installation of RACT\BACT contingency emission controls. Additional reductions which cannot be quantified by the emission inventory would be achieved through seasonal restrictions on open burning.

4.14.6.6 Additional Rules and Regulations

The following rules and regulations are supplementary to those included in the State Implementation Plan adopted by the Environmental Quality Commission in January 1991 (Section 4.14.4.2). In addition to the following, the statutory ban on

installation of used noncertified woodstoves will be codified into State rules by the Building Codes Agency.

<u>OAR</u>	<u>Subject</u>
340-21-005 to -250	Industrial Contingencies, Additional Control Requirements
340-23-043	Revised Open Burning Rules, More Restrictive Ventilation Criteria
340-23-090	Open Burning Contingency, Seasonal Ban on Open Burning
340-34-010	Ban on Sale of Noncertified Woodstoves Statewide
340-34-150	Backup Authority for Woodburning Curtailment Programs
340-34-200	Removal of Woodstove Upon Home Sale (Contingency Measure)

4.14.6.7 Lead Agency Designation

Governor Roberts has designated the Department of Environmental Quality as the lead agency to implement, maintain and enforce the requirements of the Clean Air Act regarding PM₁₀ pollution.

4.14.6.8 Resource Commitments

Residential woodburning programs are being implemented by local and State governments. Jackson County has budgeted about \$125,000 for FY92 to operate public information programs, the daily woodburning advisory, mandatory curtailment program including field surveillance and enforcement, and progress reporting. The City of Medford has budgeted about \$24,000 for FY92 to operate its mandatory curtailment program. The City of Ashland has budgeted over \$20,000 for FY92 for woodburning related programs. Central Point has about \$5,000 available to operate its voluntary curtailment program. DEQ operates the air monitoring network used by Jackson County for the daily woodburning advisory, to provide public information assistance, and to administer the woodstove certification program; these services are part of the statewide DEQ base program identified in the State/EPA Agreement.

Financial assistance programs are available through Project CLEAR and the SOLVE Program to assist low-income households in weatherization and replacement of conventional woodstoves with cleaner burning units; about \$1.5 million has been raised to date.

Industrial compliance assurance programs are implemented by DEQ as part of the statewide base program; resources are identified in the State/EPA Agreement. Open burning control programs are implemented by local fire departments, Jackson County and DEQ as part of base programs.

Forestry slash burning programs are administered by the Oregon Department of Forestry as part of base programs.

4.14.6.9 Reasonable Further Progress

Part D of Title I of the Clean Air Act Amendments of 1990 (Section 171) requires that State Implementation Plans for PM₁₀ make Reasonable Further Progress (RFP) toward attainment of the National Ambient Air Quality Standards (NAAQS). The Act further specifies that RFP means those annual incremental reductions of PM₁₀ emissions necessary to attain the NAAQS by the attainment date. The Department believes that the scheduled implementation of the provisions of the Medford-Ashland PM₁₀ SIP and attainment of the NAAQS within the Medford-Ashland nonattainment area fulfill the RFP requirement of the Act.

4.14.6.10 Plan Revision Provisions

In the event that the Medford-Ashland area fails to meet Reasonable Further Progress milestones, or the applicable PM₁₀ attainment deadline, then the Department, as the designated lead agency, will first notify in writing the affected local governments and industrial organizations. Within 30 days of notification, the Department will complete a written analysis of control strategy commitments, evaluating the adequacy of implementation. Any deficiencies in implementation will be corrected through rulemaking, if necessary, within six months of the original deficiency notification. The six-month timeframe will accommodate the State's normal rulemaking process. Additionally, affected parties will be notified of the requirement to implement expeditiously the contingency measures, if necessary. As the lead agency, the Department will submit a plan revision that meets all relevant Clean Air Act and EPA requirements within 18 months of a notification from EPA that the area has failed to meet the attainment deadline and has been reclassified to "serious."

4.14.6.11 Reviewing and Permitting New Sources

The New Source Review rules (OAR 340-20-220 to -276) and Air Contaminant Discharge Permit rules (OAR 340-20-140 to -185) identify the procedures for reviewing and permitting new sources. The significant emission rate for PM₁₀ emissions in the Medford-Ashland Air Quality Maintenance Area (AQMA) is five tons per year or ten pounds per hour (OAR 340-20-225, Table 2). The Emission Offsets rule (OAR 340-30-111) identifies the 1.2:1 offset ratio required in the Medford-Ashland AQMA. The Medford-Ashland AQMA was designated as a PM₁₀ nonattainment area by the Environmental Quality Commission in January 1991.

4.14.6.12 Public Involvement Update

Public hearings were held on the Medford-Ashland PM₁₀ SIP in Medford on August 6 and September 12, 1990. Notices were published in the Secretary of State Bulletin on July 1, 1990, in the Medford Mail Tribune on August 5 and 10, 1990, and in the Ashland Daily Tidings on August 4, 1990. The State Clearinghouse initiated the intergovernmental review process on August 3, 1990. The Medford-Ashland PM₁₀ SIP was adopted by the Environmental Quality Commission on January 31, 1991.

A public hearing is scheduled on this addendum in Medford on September 30, 1991. The public hearing notice will be published in the Secretary of State Bulletin on September 1, 1991, and in the Medford Mail Tribune 30 days prior to the hearing. The public hearing notice will also be distributed for local and State agency review through the A-95 State Clearinghouse 45 days prior to adoption by the Environmental Quality Commission.

MLH:a
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(8/14/91)

**RULEMAKING STATEMENTS FOR PROPOSED MEDFORD-ASHLAND
PM₁₀ CONTROL STRATEGY AS A REVISION TO THE
STATE OF OREGON CLEAN AIR ACT IMPLEMENTATION PLAN**

STATEMENT OF NEED FOR RULEMAKING

Pursuant to ORS 183.335(7), this statement provides information on the intended action to amend a rule.

(1) Legal Authority

This proposal amends Oregon Administrative Rules (OAR) 340-20-047. It is proposed under authority of Oregon Revised Statutes (ORS) Chapter 468.

(2) Need for these Rules

The Medford-Ashland Air Quality Maintenance Area (AQMA) violates federal and state PM₁₀ air quality health standards. PM₁₀ refers to particulate matter ten micrometers or smaller in diameter. PM₁₀ particles are considered a risk to human health due to the body's inability to effectively filter out particles of this size.

The federal Clean Air Act requires that states develop and adopt State Implementation Plan (SIP) revisions to assure that areas which violate the PM₁₀ standards are brought into attainment with those standards within prescribed time frames. A contingency plan is also required to be developed and automatically implemented if the area fails to meet the deadline. The proposed control strategy document describes the State of Oregon plan to attain and maintain the annual and 24-hour PM₁₀ standards in the Medford-Ashland AQMA.

The principal means of achieving the necessary air quality improvements is through PM₁₀ emission reductions from woodstoves and fireplaces, the wood products industries, open burning of debris, slash burning, and road dust.

(3) Principal Documents Relied Upon

The Clean Air Act Amendments of 1990, Title I. 42 U.S.C. 7401 et seq., as amended. November 15, 1990.

PM₁₀ SIP Development Guideline, U.S. Environmental Protection

Agency, Office of Air Quality Planning and Standards,
Research Triangle Park NC, June 1987, EPA-450/2-86-001.

Report of the Jackson County Woodburning Task Force, December 1987, Jackson County Department of Planning and Development, Medford, Oregon.

Previous staff reports to the Environmental Quality Commission (EQC):

Agenda Item D, January 22, 1988, EQC Meeting, Informational Report: New Federal Ambient Air Quality Standard for Particulate Matter (PM₁₀) and Its Effects on Oregon's Air Quality Program.

Agenda Item H, November 4, 1988, EQC Meeting, Request for Authorization to Conduct Public Hearings on New Industrial Rules for PM₁₀ Emission Control in the Medford-Ashland AQMA and Grants Pass and Klamath Falls Urban Growth Areas (Amendments to OAR 340, Divisions 20 and 30).

Agenda Item E, September 8, 1989, EQC Meeting, Industrial PM₁₀ Rules for Medford-Ashland and Grants Pass: Adoption of New Industrial Rules That Were Taken to Public Hearings in January 1989.

Agenda Item G, June 29, 1990, EQC Meeting, Request for Authorization to Conduct Public Hearing on PM₁₀ Air Pollution Control Strategy for the Medford-Ashland AQMA (Amendments to OAR 340-20-047).

Agenda Item D, January 31, 1991, EQC Meeting, PM₁₀ Air Pollution Control Strategy for the Medford-Ashland AQMA: Adoption of SIP Revisions That Were Taken to Public Hearings in August and September 1990.

Guidance Document for Residential Wood Combustion Emission Control Measures, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park NC, September 1989, EPA-450/2-89-015.

All documents referenced may be inspected at the Department of Environmental Quality, Air Quality Division, 811 S.W. 6th Avenue, Portland, Oregon, during normal business hours.

LAND USE CONSISTENCY STATEMENT

The proposed rule changes appear to affect land use as defined in the Department's coordination program with the Department of Land Conservation and Development (DLCDD), but appear to be consistent with the Statewide Planning Goals.

With regard to Goal 6, (air, water, and land resources quality), the proposed changes are designed to enhance and preserve air quality in the State and are considered consistent with the Goal. The proposed rule changes do not appear to conflict with the other Goals.

Public comment on any land use issue involved is welcome and may be submitted in the same fashion as indicated for other testimony on these rules.

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 DLCD to mediate any appropriate conflicts brought to our attention by local, state, or federal authorities.

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RPT\AH15007
(8/14/91)

**FISCAL AND ECONOMIC IMPACT STATEMENT
FOR PROPOSED MEDFORD-ASHLAND PM₁₀ CONTROL STRATEGY
AS A REVISION TO THE STATE IMPLEMENTATION PLAN.**

PROPOSAL SUMMARY

The implementation of the Medford-Ashland PM₁₀ control strategy involves residents, industries, local governments, and state and federal agencies. The two groups most affected by the proposed PM₁₀ control strategy are the owners/operators of wood products industries and residents with woodstoves or fireplaces.

No adverse fiscal impact on small businesses (less than 50 employees) is anticipated. Heating system dealerships may benefit from the woodstove-removal-upon-sale contingency element as well as the phaseout of woodburning curtailment exemptions required by local ordinances.

COSTS TO WOOD PRODUCTS INDUSTRIES

Wood products industry emissions will be reduced by additional control requirements on veneer driers and large wood-fired boilers at plywood plants, more extensive source testing and continuous emission monitoring in order to maximize performance of pollution control equipment, and more restrictive emission offset requirements to insure a net air quality benefit from any new or expanded industries. The new industrial emission control and monitoring requirements will result in estimated capital costs of about \$9-14 million; there will also be related increases in maintenance costs, but those costs are more difficult to quantify. Industrial PM₁₀ rules to implement these requirements were adopted by the Environmental Quality Commission (EQC) in September 1989 and incorporated into the Medford-Ashland PM₁₀ Control Strategy adopted by the EQC as a SIP revision on January 31, 1991.

If the Medford-Ashland area fails to attain the air quality standards by the Clean Air Act deadline of December 31, 1994, some additional wood products industry emission reductions will be required under the contingency plan. The contingency plan for industrial emission control requirements within the Medford-Ashland AQMA will result in an estimated capital cost of about \$1.3 million with related maintenance costs of roughly \$0.3 million per year. Details are discussed in the proposed Industrial RACT/BACT Rule fiscal impact statement (OAR 340-21-005 to 250).

COSTS TO RESIDENTS WITH WOODSTOVES OR FIREPLACES

Woodstove and fireplace emissions will be reduced by an expanded public information program, an areawide local mandatory woodburning curtailment program, the Oregon woodstove certification program, financial assistance programs for replacement of existing woodstoves with cleaner burning units and weatherization of homes, a ban on installation of non-certified woodstoves, and continued improvements in firewood seasoning and woodstove operation.

The typical cost of woodburning curtailment is estimated at \$2-4 per curtailment day per woodburning home, depending primarily on the type of alternative heat, amount of weatherization, and size of home. Economic, sole-source and certified-stove exemptions are available to qualifying households. Up to 12,000 homes in the critical PM₁₀ control area would be affected about 22 red days and 14 yellow days per year (five-year average, 1985-1990). Based on these estimates, the initial total annual homeowner cost associated with the mandatory curtailment program would be up to \$0.9-1.7 million, decreasing to \$0.3-0.7 million or less as non-certified woodstoves are replaced with cleaner burning units.

Costs associated with the ban on the sale and installation of used noncertified woodstoves is discussed in the fiscal impact statement for the proposed rule (OAR 340-34-010).

Costs associated with the contingency plan element requiring the removal of woodstoves from homes upon sale is discussed in the fiscal impact statement for the proposed rule (OAR 340-34-200).

The above costs are somewhat offset by local financial assistance programs. The CLEAR (Coordinated Local Effort for Air Resources) Project of the Housing Authority of Jackson County and ACCESS, Inc. are providing assistance to low-income families for home weatherization and replacement of existing woodstoves with cleaner burning units. Approximately \$2.0 million of funding has been secured thus far through Community Development Block Grants, Regional Strategies Funds, Oil Overcharge Settlement Funds, and utility company rebates. The City of Ashland has budgeted \$64,494 for the first year of the SOLVE (Save Our Liveability, View and Environment) Program to replace existing woodstoves and weatherize homes.

COSTS TO STATE AND LOCAL GOVERNMENT AGENCIES

The new industrial emission control and monitoring requirements will require additional plan reviews, permit modifications, inspections, monitoring report reviews, and other compliance assurance activities by Department of Environmental Quality staff. This additional work will be integrated into the permit program and fee structure.

The daily decision on woodburning curtailment programs will be based on air quality information from the Department's existing air monitoring network and meteorological information from the National Weather Service. The daily woodburning decision (red, yellow, or green call) will be made by the Jackson County Health Department. Public information programs will be done by Jackson County and cities within the AQMA with DEQ or subcontractor assistance. The compliance assurance surveys, exemption permitting and enforcement activities for the woodburning curtailment programs will be conducted by local government staff of Jackson County and affected cities within the AQMA. Depending on whether or not a local ordinance is adopted, DEQ may be involved in implementing a mandatory curtailment program in Central Point. Some grant funds from the U.S. Environmental Protection Agency (EPA) may be available to help support these programs.

Jackson County has budgeted about \$105,000 for the next year for an air quality coordinator, three part-time technicians, one part-time clerical assistant, and the public information program. The City of Medford has budgeted about \$24,000 for its air quality program during the next heating season. The City of Ashland has budgeted \$64,494 for the first year of the SOLVE Program. These local governments, and other cities within the AQMA, will also shift existing resources as necessary to handle the workload associated with the air quality programs.

MLH:a
RPT\AH15008
(8/14/91)

NOTICE OF PUBLIC HEARING

Hearing Dates: September 26,
27, 30 & October
1, 1991
Comments Due: October 2, 1991

WHO IS AFFECTED:

Individuals, especially those with woodstoves, and board product industries statewide, local governments, agricultural operations and industries in or near the Medford-Ashland, Klamath Falls, Grants Pass and La Grande PM₁₀ Nonattainment Areas.

WHAT IS PROPOSED:

The Department of Environmental Quality is proposing to amend OAR 340-20-047, the State of Oregon Clean Air Act Implementation Plan to:

- o Revise fine particulate (PM₁₀) Pollution Control Strategies for the Medford, Grants Pass and Klamath Falls areas;
- o Add a new PM₁₀ Control Strategy for the La Grande area;
- o Add new regulations for woodstoves, OAR Chapter 340, Division 34;
- o Add new contingency industrial particulate emission standards for PM₁₀ nonattainment areas, OAR Chapter 340, Division 21;
- o Revise the Medford/Grants Pass Particulate Standard Rules, OAR Chapter 340, Division 30;
- o Revise Board Products Particulate Emission Standard Rules, OAR Chapter 340, Division 25;
- o Revise Ambient Air Standard Rules, OAR Chapter 340, Division 31;
- o Revise Rogue Basin Open Burning Control Area rules, OAR Chapter 340, Division 23.

WHAT ARE THE HIGHLIGHTS:

The federal Clean Air Act requires states to submit PM₁₀ attainment Control Strategies for PM₁₀ Nonattainment Areas to the U.S. Environmental Protection Agency (EPA) by November 15, 1991. The Control Strategies specify how federal PM₁₀ air quality standards will be attained by the Act's deadline of December 31, 1994. They primarily rely on controlling PM₁₀ emissions from residential woodheating, industry and open burning.

ATTACHMENT D

The proposed rules which would implement PM₁₀ Control Strategies will:

- o Regulate residential woodheating according to new legislative authority including:
 - > Banning the sale of used, uncertified woodstoves statewide;
 - > allowing DEQ to prohibit woodheating on poor air quality days if local governments fail to adopt or implement such programs where needed;
 - > Requiring the destruction of uncertified woodstoves upon the sale of a home as a contingency measure if an area fails to attain compliance with the PM₁₀ standard by December 31, 1994.
- o Require industries in PM₁₀ nonattainment areas to meet Reasonably Available and Best Available Control Technology requirements of the Clean Air Act as a contingency measure if areas fail to attain compliance with the PM₁₀ standard by the Clean Air Act deadline.
- o Require tighter meteorological criteria for allowing open burning in the Rogue Basin Open Burning Control Area, and ban open burning from November through February in this area as a contingency if it fails to attain compliance with the PM₁₀ standard by the Clean Air Act deadline.
- o Address housekeeping/enforceability issues raised by EPA with respect to existing state regulations covering the Board Products Industry, Medford/Grants Pass Industrial Particulate Emission and Ambient Air Standards.

HOW TO COMMENT:

Copies of the complete proposed rule packages may be obtained from the Air Quality Division at 811 S.W. Sixth Avenue, Portland, OR 97204, or the regional office nearest you. For further information, call toll free 1-800-452-4011 (in Oregon), or contact:

Merlyn Hough at (503) 229-6446 (Medford-Ashland)
John Core at (503) 229-5380 (Klamath Falls)
Howard Harris at (503) 229-6086 (Grants Pass)
Brian Finneran at (503) 229-6278 (La Grande)
Andy Ginsburg at (503) 229-5581 (Industry)
David Collier at (503) 229-5177 (Woodstoves)

Public hearings will be held before a hearings officer at:

7:00 pm
September 26, 1991
Commission Hearing Room
Courthouse Annex
Klamath Falls, Oregon

7:00 pm
September 30, 1991
Smullin Center Auditorium
Rogue Valley Medical Ctr.
Medford, Oregon

7:00 pm
September 27, 1991
City Council Chambers
101 NW "A" Street
Grants Pass, Oregon

7:00 pm
October 1, 1991
City Hall
1000 Adams Avenue
La Grande, Oregon

3:00 pm
October 1, 1991
DEQ Offices
811 SW Sixth Avenue
Portland, Oregon

Oral and written comments will be accepted at the public hearings. Written comments may be sent to the DEQ, but must be received no later than 5 pm, October 2, 1991.

WHAT IS THE NEXT STEP:

After public hearings, the Environmental Quality Commission may adopt rule amendments and Control Strategies identical to the proposed amendments, adopt modified rule amendments and Control Strategies on the same subject matter, or decline to act. The adopted rules and Control Strategies will be submitted to the EPA as part of the State Clean Air Act Implementation Plan. The Commission's deliberation should come on November 7, 1991, 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.

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(8/14/91)

168.300

PUBLIC HEALTH AND SAFETY

(2) in determining air purity standards, the commission shall consider the following factors:

(a) The quality or characteristics of air contaminants or the duration of their presence in the atmosphere which may cause air pollution in the particular area of the state;

(b) Existing physical conditions and topography;

(c) Prevailing wind directions and velocities;

(d) Temperatures and temperature inversion periods, humidity, and other atmospheric conditions;

(e) Possible chemical reactions between air contaminants or between such air contaminants and air gases, moisture or sunlight;

(f) The predominant character of development of the area of the state, such as residential, highly developed industrial area, commercial or other characteristics;

(g) Availability of air-cleaning devices;

(h) Economic feasibility of air-cleaning devices;

(i) Effect on normal human health of particular air contaminants;

(j) Effect on efficiency of industrial operation resulting from use of air-cleaning devices;

(k) Extent of danger to property in the area reasonably to be expected from any particular air contaminants;

(l) Interference with reasonable enjoyment of life by persons in the area which can reasonably be expected to be affected by the air contaminants;

(m) The volume of air contaminants emitted from a particular class of air contamination source;

(n) The economic and industrial development of the state and continuance of public enjoyment of the state's natural resources; and

(o) Other factors which the commission may find applicable.

(3) The commission may establish air quality standards including emission standards for the entire state or an area of the state. The standards shall set forth the maximum amount of air pollution permissible in various categories of air contaminants and may differentiate between different areas of the state, different air contaminants and different air contamination sources or classes thereof. [Formerly 449.785]

468.300 When liability for violation not applicable. The several liabilities which may be imposed pursuant to ORS 448.305, 454.010

to 454.040, 454.205 to 454.255, 454.405, 454.425, 454.505 to 454.535, 454.605 to 454.745 and this chapter upon persons violating the provisions of any rule, standard or order of the commission pertaining to air pollution shall not be so construed as to include any violation which was caused by an act of God, war, strife, riot or other condition as to which any negligence or wilful misconduct on the part of such person was not the proximate cause. [Formerly 449.825]

468.305 General comprehensive plan. Subject to policy direction by the commission, the department shall prepare and develop a general comprehensive plan for the control or abatement of existing air pollution and for the control or prevention of new air pollution in any area of the state in which air pollution is found already existing or in danger of existing. The plan shall recognize varying requirements for different areas of the state. [Formerly 449.782]

468.310 Permits. By rule the commission may require permits for air contamination sources classified by type of air contaminants, by type of air contamination source or by area of the state. The permits shall be issued as provided in ORS 468.065. [Formerly 449.727]

468.315 Activities prohibited without permit; limit on activities with permit. (1) Without first obtaining a permit pursuant to ORS 468.065, no person shall:

(a) Discharge, emit or allow to be discharged or emitted any air contaminant for which a permit is required under ORS 468.310 into the outdoor atmosphere from any air contamination source.

(b) Construct, install, establish, develop, modify, enlarge or operate any air contamination source for which a permit is required under ORS 468.310.

(2) No person shall increase in volume or strength discharges or emissions from any air contamination source for which a permit is required under ORS 468.310 in excess of the permissive discharges or emission specified under an existing permit. [Formerly 449.731]

468.320 Classification of air contamination sources; registration and reporting of sources. (1) By rule the commission may classify air contamination sources according to levels and types of emissions and other characteristics which cause or tend to cause or contribute to air pollution and may require registration or reporting or both for any such class or classes.

(2) Any person in control of an air contamination source of any class for which registration and reporting is required under subsection (1) of this section shall register

**Summary of Proposed PM₁₀ Control Strategy
Medford-Ashland Air Quality Maintenance Area (AQMA)**

Who? When? Key: L=Local Government, S=State Agency,
E=Existing Strategies, N=New Strategies,
C=New Contingency Plan

Residential Woodburning Controls:

L/S	E	Woodburning public education program;
L	E	Voluntary cordwood seasoning program;
L	E	Financial assistance programs to assist low-income households in weatherization and replacement of conventional woodstoves with cleaner burning units (Project CLEAR and SOLVE Program, about \$1.5 million raised to date);
L	E	Mandatory woodburning curtailment to achieve 85% compliance during air stagnation episodes in the PM ₁₀ Critical Control Area;
L	E	Ban on installation of non-certified woodstoves in Medford and the unincorporated portion of the AQMA;
S	E	EPA\DEQ certification program for new woodstoves;
S	N	Backup authority from 1991 Legislature for DEQ to adopt mandatory curtailment programs in the event that local governments fail to adopt, implement or enforce local ordinances (in November 1990, Central Point voters repealed their mandatory curtailment program);
S	N	Statewide ban from 1991 Legislature on the sale and installation of used, non-certified woodstoves;
S	C	State backup authority from 1991 Legislature to require removal of non-certified woodstoves upon sale of property.

Fugitive Dust Controls:

L	E	Winter road sanding emissions reduced through use of pea gravel aggregate and rapid cleanup;
L	E	Mandatory prevention or cleanup of trackout from unpaved areas onto roadways;

Who? When? Key: L=Local Government, S=State Agency,
E=Existing Strategies, N=New Strategies,
C=New Contingency Plan

L E Financial assistance programs to pave unpaved roads and curb unpaved shoulders on paved roads.

Open Burning Controls:

L E Year-round ban on open burning in the City of Medford;

L E Seasonal bans on open burning and restrictive ventilation index criteria in other cities and in Jackson County within the AQMA;

S E Ban on commercial, industrial and land-clearing open burning within the Rogue Basin Open Burning Special Control Area;

S E Mandatory forestry smoke management program in the Restricted Area (area west of crest of Cascades plus the Deschutes National Forest) limiting slash burning to times and locations that smoke is not expected to impact designated areas such as the Medford-Ashland AQMA;

S E Voluntary forestry smoke management program to restrict all BLM slash burning within 30 miles of the Medford-Ashland AQMA on red residential woodburning curtailment days;

S N Revision of the ventilation criteria for the Rogue Basin Open Burning Special Control Area from the current 200 index to the more restrictive 400 index;

S C Ban on open burning within the Rogue Basin Open Burning Control Area during November, December, January, and February.

Industrial Controls:

S E More restrictive AQMA industrial rules than the statewide requirements for particle dryers, fiberboard plants, charcoal furnaces, air conveying systems, large wood-fired boilers, wigwam burners, operation and maintenance, fugitive emissions, and source testing (implemented during 1978-84);

Who? When? Key: L=Local Government, S=State Agency,
E=Existing Strategies, N=New Strategies,
C=New Contingency Plan

- | | | |
|---|---|---|
| S | E | New industrial rules adopted in 1989 to require additional air pollution controls on veneer dryers and large wood fired-boilers; |
| S | E | Additional continuous emission monitoring and periodic source testing requirements on industrial sources to maximize performance of control equipment and minimize emissions; |
| S | E | More restrictive offset requirements for new or expanded industrial operations; |
| S | C | Tightening of industrial rules for air conveying systems and charcoal plants to insure meeting RACT/BACT or better emission control; |
| S | C | Feasibility study on dual-fueling on large wood-fired boilers, with the alternate fuel to be used on red or yellow days. |

MLH:a
RPT\AH15009
(8/14/91)

REQUEST FOR EQC ACTION

Meeting Date: August 22, 1991
Agenda Item: B
Division: Air Quality
Section: Planning & Development

SUBJECT:

Hearing Authorization: Revised PM₁₀ Control Strategy for the Klamath Falls Nonattainment Area.

PURPOSE:

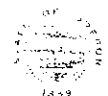
To meet new Clean Air Act requirements.

ACTION REQUESTED:

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

- Authorize Rulemaking Hearing
 - Adopt Rules
 - Proposed Rules Attachment A
 - Rulemaking Statements Attachment B
 - Fiscal and Economic Impact Statement Attachment C
 - Public Notice Attachment D

- Issue a Contested Case Order
- Approve a Stipulated Order
- Enter an Order
 - Proposed Order Attachment



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



Meeting Date: 8/22/91
Agenda Item: B
Page 2

<input type="checkbox"/> Approve Department Recommendation	
<input type="checkbox"/> Variance Request	Attachment <input type="checkbox"/>
<input type="checkbox"/> Exception to Rule	Attachment <input type="checkbox"/>
<input type="checkbox"/> Informational Report	Attachment <input type="checkbox"/>
<input type="checkbox"/> Other: (specify)	Attachment <input type="checkbox"/>

DESCRIPTION OF REQUESTED ACTION:

A revised control strategy for PM₁₀ (small particulate air pollution) is proposed for the Klamath Falls Nonattainment Area to ensure attainment of federal ambient air quality standards. This revised control strategy must be submitted to the U.S. Environmental Protection Agency by November 15, 1991 under the new Clean Air Act requirements.

National PM₁₀ (particulate matter less than 10 μm in size) ambient air quality health standards are exceeded in Klamath Falls an average of 47 days per year. Maximum concentrations during these periods have been as much as five times greater than air quality health standard. The 1990 Clean Air Act (Act) requires states to revise PM₁₀ control strategies for nonattainment areas to assure attainment of the air quality health standards.

The revised strategy for Klamath Falls includes specific Reasonably Available Control Measures (RACMs) and a contingency plan. RACM provisions of the recently adopted Klamath County Clean Air Ordinance have been incorporated into the control strategy and include a mandatory curtailment program, a year around 20% visible emissions requirement for woodstoves and a ban on the installation of used noncertified woodstoves (also covered by Department rules).

Proposed contingency plans which would automatically go into effect if the area fails to attain the PM₁₀ standard by the Act deadline of Dec. 31, 1994, include: a) removal and destruction of noncertified woodstoves upon home sale, b) a mandatory fuelwood seasoning requirement, c) expansion of Klamath County's air quality control area, d) a prohibition on installation of more than one woodstove in a new dwelling, e) additional dust control measures, and f) a mandatory forestry and agricultural smoke management programs within Klamath County. Industry within the nonattainment area (the Urban Growth Boundary) would also be required in the contingency plan to install new control systems that meet the Act's requirements for Reasonable and Best Available Control Technology (RACT\BACT). Industry

Meeting Date: 8/22/91
Agenda Item: B
Page 3

located near the nonattainment area would be required to install RACT\BACT controls if their emissions are found to have a significant impact on the nonattainment area. A complete listing of the control strategy is presented in Attachment F.

The proposed control strategy has been designed to assure attainment of the air quality standards and meet the requirements of the Clean Air Act.

AUTHORITY/NEED FOR ACTION:

<input type="checkbox"/> Required by Statute: _____	Attachment _____
Enactment Date: _____	
<input checked="" type="checkbox"/> Statutory Authority: <u>ORS 468.305</u>	Attachment <u>E</u>
<input type="checkbox"/> Pursuant to Rule: _____	Attachment _____
<input checked="" type="checkbox"/> Pursuant to Federal Law/Rule:	
Federal Clean Air Act Amendments of 1990.	Attachment _____
<input type="checkbox"/> Other:	Attachment _____
<input checked="" type="checkbox"/> Time Constraints:	

The 1990 Clean Air Act requires states to:

- o Submit revised PM₁₀ control strategies (including contingency plans) by November 15, 1991;
- o Fully implement the attainment strategies by December 10, 1993;
- o Attain PM₁₀ standards by December 31, 1994; and
- o Implement contingency plan by July 1, 1995, if PM₁₀ standards are not met by December 31, 1994.

DEVELOPMENTAL BACKGROUND:

<input type="checkbox"/> Advisory Committee Report/Recommendation	Attachment _____
<input type="checkbox"/> Hearing Officer's Report/Recommendations	Attachment _____
<input type="checkbox"/> Response to Testimony/Comments	Attachment _____

In June, 1990, the Commission approved public hearings on the initial draft of the Klamath Falls PM₁₀ State Implementation Plan (SIP). A hearing was held in Klamath Falls on September 18, 1990 and, on January 31, 1991, the initial Plan was adopted. At this time, the plan did not contain enforceable provisions for the woodstove curtailment program. Subsequent to adoption, the Environmental Protection Agency issued new guidance on the PM₁₀ requirements of the 1990 Clean Air Act

Meeting Date: 8/22/91
Agenda Item: B
Page 4

Amendments. Klamath County also adopted the Klamath County Clean Air Ordinance on August 7, 1991 establishing a mandatory curtailment program, open burning and fugitive dust restrictions and a contingency plan with numerous new control strategy elements. In addition, HB2175 was adopted by the Oregon Legislature which provides additional woodheating control strategies. All of these events require revisions to the Klamath Falls PM₁₀ SIP.

X Prior EQC Agenda Items:

Agenda Item D, January 31, 1991 Klamath Falls PM₁₀ Plan

Summary of Control Strategy
& Contingency Plan Attachment F

Other Related Reports/Rules/Statutes: Attachment
 Supplemental Background Information Attachment

REGULATED/AFFECTED COMMUNITY CONSTRAINTS/CONSIDERATIONS:

Implementation of the PM₁₀ air pollution control strategy involves residents, industries, local governments, and state and federal agencies. Residents with woodstoves and fireplaces and owners/operators of wood products industries are the two groups most affected by the previous PM₁₀ attainment strategies (adopted in September 1989 and January 1991) and the proposed revisions to the strategy, including the contingency plan. In the event that a PM₁₀ control strategy for Klamath Falls is not adopted as a revision to the State Implementation Plan, the Clean Air Act requires economic sanctions which include restricting federal highway funds, increased emission offset requirements for new or expanding industry, and ultimately a Federal Implementation Plan to be implemented by EPA.

Other considerations include the issue of smoke from forestry slash burning which is of significant concern among the public. Although the current Oregon Department of Forestry (ODOF) Smoke Management Program meets Clean Air Act requirements, revision to the SIP to strengthen protection of PM₁₀ nonattainment areas from smoke impacts are being discussed with ODOF and will be included in the SIP in the near future.

Within the regulated community, the principal concern will likely be the proposed RACT\BACT industrial

emission strategy and contingency plan. The Department is proposing adoption of rules that would establish BACT in the contingency plan instead of waiting until eighteen months after the contingency trigger as allowed under the Clean Air Act in order to give industry some certainty of requirements early in the process and to avoid the establishment of two different standards within a short time-frame. Industry and environmental groups may not agree with the Department's determination of BACT and its interpretation of Clean Air Act requirements. The Department's proposal and alternatives are further explained in the documentation for the proposed industrial emission standard rules under agenda item E for the August 22, 1991 EQC meeting.

The economic impacts of the proposed strategy are outlined in Attachment C.

PROGRAM CONSIDERATIONS:

The contingency plan, if required due to failure to meet PM₁₀ standards by the December 1994 deadline, would also require new Department work which should be able to be integrated into existing permitting and woodstove program activities.

ALTERNATIVES CONSIDERED BY THE DEPARTMENT:

1. Defer action to EPA. If a state fails to meet the Clean Air Act PM₁₀ requirements, EPA is required to impose sanctions and ultimately prepare a Federal Implementation Plan (FIP) to address the PM₁₀ problems.
2. Rely only on the contingency elements of the Klamath County Clean Air Ordinance and the destruction of uncertified woodstoves upon home sales provisions of HB2175 for the contingency plan and not address other significant sources such as industry affecting airshed PM₁₀ violations. This alternative would be perceived by the community as inequitable and would weaken cooperative efforts of citizens needed to effectively implement the plan.
3. Propose revisions to the Klamath Falls PM₁₀ control strategy to include all of the provisions of the Klamath County Clean Air Ordinance and provisions of HB2175 with respect to woodstoves and a contingency plan.

Meeting Date: 8/22/91
Agenda Item: B
Page 6

DEPARTMENT RECOMMENDATION FOR ACTION, WITH RATIONALE:

The Department recommends the third alternative in order to 1) implement the new legislative authority regarding residential woodburning programs, 2) provide a balanced strategy affecting all major sources, 3) insure attainment of PM₁₀ standards, and 4) fulfill Clean Air Act requirements.

The Department requests authorization to hold public hearings to revise the SIP by adopting attachment A as a replacement for the PM₁₀ air pollution control strategy for the Klamath Falls Nonattainment Area.

CONSISTENCY WITH STRATEGIC PLAN, AGENCY POLICY, LEGISLATIVE POLICY:

The proposed PM₁₀ control strategies are consistent with Goals 2, 3, 4, and 5 of the Strategic Plan. The Department is not aware of any conflicts with agency or legislative policy. The proposed strategy and supporting rules are consistent with the Oregon Benchmarks goal of increasing the percentage of Oregonians living in area which meet ambient air quality standards.

ISSUES FOR COMMISSION TO RESOLVE:

Does the EQC concur with the proposed manner of implementing the recent woodheating statutes and the overall balance of the contingency plans?

Meeting Date: 8/22/91
Agenda Item: B
Page 7

INTENDED FOLLOWUP ACTIONS:

1. Hold public hearings on the proposed revisions to the Klamath Falls PM₁₀ air pollution control strategy.
2. Summarize public testimony and respond to issues.
3. Propose adoption, with appropriate revisions in response to testimony, at November 1991 EQC Meeting.

Approved:

Director:

Jul Hamm

Division:

Sh Greenwood

Section:

John Kowalyszyn

Report Prepared By: John Core (229-5380)

Date Prepared: August 14, 1991

JEC:a
RPT\AH14492
(8/14/91)

Draft State Implementation Plan for Particulate Matter

Klamath Falls, Oregon
Nonattainment Area

A Plan for Attaining and
Maintaining the National Ambient
Air Quality Standard for PM-10

State of Oregon
Department of Environmental Quality
Air Quality Division

August 1991

Table of Contents

Executive Summary	5
4.12.0 State Implementation Plan for Klamath Falls	
PM ₁₀ Nonattainment Area	12
4.12.0.1 Introduction	12
4.12.0.2 SIP Overview	12
4.12.0.3 Area Description	12
4.12.0.4 Klamath Falls Meteorology	14
4.12.0.5 Health Effects of PM ₁₀ and Wood Smoke	16
4.12.1 Ambient Air Quality	17
4.12.1.1 Air Monitoring Methods	19
4.12.1.2 PM ₁₀ Air Quality in Klamath Falls	20
Review of PM ₁₀ Concentrations	20
Hourly Variability	21
Worst Case Day Characteristics	21
Impacts from Sources External to the UGB	22
Background Air Quality	22
Aerosol Chemistry	24
4.12.2 Nonattainment Area Analysis	24
4.12.2.1 Design Values Determination	24
4.12.2.2 Emission Inventory	25
Introduction	25
Base Year Emission Inventory	26
24-Hour Worst Case Day Inventory	30
Growth Factors	32
Projected Emissions, 1986 to 1994	33
Projected Emissions Beyond 1994	33
4.12.2.3 Source Contributions to PM ₁₀	35
Ambient Aerosol & Source Emission Analysis	36
Receptor Model Source Contribution Estimates	37
Annual Average Contributions	38
Multiple Linear Regression Analysis.	38
Analysis of Impacts by Source Categories	41
Background PM ₁₀ Air Quality	41
Estimation of "Local" Air Quality Impacts	42
4.12.3 Emission Reduction Analysis	43
4.12.3.1 Emission Reduction Necessary for Attainment	43
Projected 24-Hour Source Impacts in 1994	43
Projected Annual Source Impacts in 1994	45
4.12.3.2 Evaluation of Potential Control Measures	46
PM ₁₀ Control Strategy Elements	46
Residential Wood Smoke Control Elements	47
The Woodstove Certification Program	47
The Klamath County Air Quality Program	53
Long-Term Woodheating Control Strategy	56
Woodburning Curtailment Credits	57
State of Oregon Statute.	58
Fugitive Dust RACM Measures.	63

Wood Combustion Control Measures	64
RACM for Prescribed Burning.	66
Fugitive Dust Control Element	67
Road Sanding Control Credits	67
Restrictions on Open Burning	68
Forestry Slash Burning	69
Industrial Emission Growth	69
Contingency Measures & Emission Reductions	70
4.12.3.3 Demonstration of Attainment	72
4.12.3.4 Emission Offsets and Banking	73
4.12.3.5 Demonstration of Maintenance	74
4.12.3.6 Emergency Action Plan Provisions	74
4.12.4 Implementation of the Control Strategy	75
4.12.4.1 Schedule for Implementation	75
4.12.4.2 Rules, Regulations and Commitments	75
State of Oregon Rules	75
Klamath County & City Ordinances	76
Interagency Commitments	76
4.12.4.3 Reasonable Further Progress.	76
4.12.4.4 Revisions to the Plan	76
4.12.4.5 New Source Review Permitting Authority	77
4.12.4.6 Delegation of Lead Agency Authority	77
4.12.5 Resource Commitments.	77
4.12.6 Public Involvement	78
4.12.6.1 Citizen Advisory Committee	78
4.12.6.2 Public Notice	78
4.12.6.3 Public Hearings	79
4.12.6.4 Intergovernmental Review	79

Appendices

- Appendix 1: PM₁₀ Air Quality Data, 1986-1989
- Appendix 2: Methodology for Estimating Design Values
- Appendix 3: Klamath Falls Detailed Emission Inventories
- Appendix 4: Ordinances & Commitments:
 - Klamath County Air Quality Program
 - Klamath County Clean Air Ordinance
 - City of Klamath Falls Ordinance
 - Winter Road Sanding Commitment from Highway Division
 - State Fire Marshal Correspondence on Open Burning
 - Voluntary Smoke Management Programs
- Appendix 5: Demonstration of Attainment
- Appendix 6: Klamath Falls 1991 Woodheating Survey
- Appendix 7: Woodburning Curtailment Forecasting Methodology

List of Tables

<u>Table</u>	<u>Title</u>	<u>Page</u>
4.12.1-1	Data Collection Periods by Method.	20
4.12.1-2	PM ₁₀ Maximum Concentrations, 24-Hr Average	20
4.12.1-3	Summary of PM ₁₀ Air Quality Data	21
4.12.2-1	Design Value Summary	25
4.12.2-2	1986 UGB Annual Emission Inventory	30
4.12.2-3	24-Hour Worst Case Inventory, 1986	32
4.12.2-4	1994 Estimated Emissions	33
4.12.2-5	1994 to 2000 Annual Emissions.	35
4.12.2-6	1994 to 2000 Worst Case Day Emissions.	35
4.12.2-7	Source Emission Profiles	37
4.12.2-8	Average Winter Exceedance Day Source Contribution Estimates	37
4.12.2-9	Annual Average PM ₁₀ Source Contributions	38
4.12.2-10	Background PM ₁₀ Source Contributions	42
4.12.2-11	Average Exceedance Day "Local" Source Impacts.	42
4.12.2-12	Annual Average "Local" Source Impacts.	42
4.12.3-1	Projected Source Impacts, 24-Hr Worst Case Day	45
4.12.3-2	Projected Source Impacts, Annual Average Case.	46
4.12.3-3	PM ₁₀ Control Strategy Elements	47
4.12.3-4	Summary of 24-Hour Emission Reductions	72
4.12.3-5	Summary of Annual Emission	73

List of Figures

<u>Figure</u>	<u>Title</u>	<u>Page</u>
4.12.0-1	Nonattainment Area Map.	15
4.12.1-1	Winter PM ₁₀ Distribution Map.	27
4.12.1-2	Diurnal & Seasonal Variations in PM ₁₀	28
4.12.2-1	Klamath Falls PM ₁₀ Emission Inventories	39
4.12.2-2	1986 to 2000 Emission Projections	40
4.12.2-3	Klamath Falls PM ₁₀ Source Contributions	44

Executive Summary

The US Environmental Protection Agency (EPA) adopted a new particulate National Ambient Air Quality Standard (NAAQS) for PM₁₀ on July 1, 1987. PM₁₀ particulate is less than 10 micrometers in aerodynamic diameter or about one-tenth of the diameter of a human hair. The NAAQS adopted by the US Environmental Protection Agency were established to protect public health and welfare. The Environmental Quality Commission adopted a Klamath Falls PM₁₀ control strategy in January of 1991. The Clean Air Act as amended in November, 1990 contains further requirements for PM₁₀ control strategies that include the necessity to demonstrate attainment by December 31, 1994 and include a contingency plan to be implemented if attainment is not reached by the deadline. This document describes the State of Oregon's revised plan to attain the PM₁₀ standard in Klamath Falls.

High exposure to particulate matter is of concern because of human health effects such as changes in lung functions and increased respiratory symptoms, aggravation of existing respiratory and cardiovascular disease, alteration in the body's defense system against foreign materials, damage to lung tissue, increased risk of cancer and, in extreme cases, premature death. Most sensitive to the effects of particulate matter are people with chronic obstructive pulmonary cardiovascular disease and those with influenza, asthmatics, the elderly, children and mouth-breathers.

Air quality measurements taken in Klamath Falls have indicated that the 24-hour PM₁₀ health NAAQS was exceeded on average 47 days per year during the winter months during the period of mid-1986 to mid-1989. The annual average concentration of PM₁₀ during the years 1986-1989 of 75 $\mu\text{g}/\text{m}^3$ also exceeds the annual average PM₁₀ NAAQS of 50 $\mu\text{g}/\text{m}^3$.

The 24-hour PM₁₀ NAAQS is 150 micrograms per cubic meter of air ($\mu\text{g}/\text{m}^3$), not to be exceeded more than three times averaged over three calendar years. Winter 24-hour concentrations of PM₁₀ in Klamath Falls are among the highest recorded anywhere in the nation with maximum concentrations reaching as high as 792 $\mu\text{g}/\text{m}^3$ on January 25, 1988.

An inventory of PM₁₀ emissions developed for the Klamath Falls Urban Growth Boundary indicates that the major sources of particulate emissions during 1986 winter periods of worst-case 24-hour PM₁₀ concentrations are residential wood combustion (81%), industrial emissions (7%) and soil dust (9%). On an annual basis, these sources contribute 61%, 10% and 12%, respectively. Emission inventory information representative of worst-case 24-hour conditions has been verified through receptor modeling techniques which actually measure source contributions to ambient air quality on the basis of their chemical "fingerprints."

Extensive air monitoring surveys have been completed which clearly demonstrate that the south suburban area of Klamath Falls, which comprises about 54% of the population within the UGB, has the highest winter PM₁₀ concentrations within the airshed. Based on these surveys, ambient air monitoring conducted at Peterson School have been shown to generally represent the highest PM₁₀ levels within the Urban Growth Boundary. Development of a SIP which assures attainment and maintenance of the NAAQS at the Peterson School site should therefore be adequate to demonstrate attainment of the NAAQS anywhere within the airshed.

PM₁₀ design values are those representative 24-hour worst case and annual average concentrations from which reductions must be made to achieve the NAAQS. Analysis of all of the available PM₁₀ air quality data over the period of mid-1986 to mid-1989 (the largest available database) indicates 1986 24-hour and annual design values of 550 $\mu\text{g}/\text{m}^3$ and 75 $\mu\text{g}/\text{m}^3$, respectively. The design values adjusted for expected or potential emission changes (assuming no emission strategy elements are applied) during the 1986-1994 period are 592 $\mu\text{g}/\text{m}^3$ and 73 $\mu\text{g}/\text{m}^3$, respectively. Control strategies included in this plan have been designed to reduce projected 24-hour concentrations of PM₁₀ by 442 $\mu\text{g}/\text{m}^3$ (592 - 150 $\mu\text{g}/\text{m}^3$) and the annual average by 23 $\mu\text{g}/\text{m}^3$ (73 - 50 $\mu\text{g}/\text{m}^3$). To achieve these 24 hour and annual average air quality improvements will require a 76% reduction in 24-hour worst case day emissions and a 40% reduction in annual emissions within the Urban Growth Boundary.

CONTROL STRATEGY OVERVIEW

The control strategies needed to assure attainment of the PM₁₀ National Ambient Air Quality Standards focus on control of residential wood combustion, fugitive dust and open burning emissions. Other strategies include stringent management of future growth in industrial emission. The strategies are implemented through a comprehensive and stringent program and ordinance adopted by the Klamath County Board of Commissioners on July 31, 1991 and through the Department's rules. The City of Klamath Falls, in a resolution adopted in August, 1991, authorized Klamath County to implement and enforce all of the provisions of the Klamath County ordinance within the city limits of Klamath Falls.

The Clean Air Act requires that PM₁₀ control strategies include Reasonably Available Control Measures (RACM). EPA guidance indicates listed RACM measures must be included in the attainment plan if needed to demonstrate attainment. Otherwise, RACM is to be included in the contingency plan for all significant source categories contributing to PM₁₀ violations. RACM for industrial point sources is referred to as Reasonably Available Control Technology (RACT).

For an area that fails to meet PM₁₀ standards by December 31, 1994, the Clean Air Act requires that the area be redesignated as

a "serious" nonattainment area and that a revised PM₁₀ control strategy include additional control measures. EPA guidance indicates Best Available Control Measures (BACM) must be included for all significant source categories contributing to PM₁₀ violations. BACM for industrial point sources is referred to as Best Available Control Technology (BACT).

The Klamath Falls PM₁₀ control strategy (the combination of the attainment strategy and contingency plan) satisfies the RACM requirements for area sources, and should satisfy the RACT and BACT requirements for industrial point sources. EPA is scheduled to provide BACM guidance on residential woodburning, fugitive dust and prescribed burning by May 15, 1992. It is anticipated that the Klamath Falls PM₁₀ control strategy should satisfy BACM requirements for area sources.

Residential Wood Combustion Strategies

The principal means of achieving the needed reductions is through a stringent woodburning curtailment and emission reduction programs. At least a 90% reduction in wood smoke emissions is needed on poor ventilation days to attain the 24-hour NAAQS. This reduction will have to come from most of Klamath Falls' estimated 10,000 woodburning households which will have to forego use of their woodstoves during air stagnation episodes. Additional reductions throughout the heating season from the phase in of certified woodstoves will help achieve attainment of the annual standard. A strong public education program is an essential element of the strategy.

The Klamath County program also includes a year around, 20% woodstove plume opacity regulation (stove startup and shutdown periods exempted) and phase-out of woodheating curtailment exemptions: sole source nonowner occupied dwellings by 1993 and owner occupied, low income sole source by 1998. All households that are solely heated with wood (except tenant occupied and low income) must have secondary heat sources by 1996. Also adopted was a ban on the sale of used, noncertified woodstoves within the county.

A home weatherization and woodstove replacement program for low income homeowners funded at \$1.44 million has further reduced woodstove emissions by removing noncertified stoves from about 400 homes. In addition, results from the Klamath Falls 1991 Woodheating Survey indicate that 30% of the households that burned wood as their main source of heat in 1987 have voluntarily switched to other fuels (principally natural gas). Voluntary fuel switching by the public and reductions in the amount of wood each household burns has resulted in a reduction of worst case day emission by 36% relative to 1986 levels, exclusive of all other control strategies.

The strategy is implemented through the Klamath County Air Quality Air Quality Program and the Department's rules that regulate woodstoves.

Fugitive Dust Control Strategies

A 60% reduction in winter road sanding emissions through the use of liquid road deicing techniques in lieu of rock aggregate, application of less road sanding material and rapid cleanup of used road sanding aggregate will achieve fugitive dust emissions reductions needed to assure attainment of the annual standard. The road sanding strategy is implemented through a Memorandum of Understanding with the Oregon Department of Transportation Highway Division. Other dust control measures include mandatory cleanup of trackout from unpaved areas onto State highway right-of-ways enforced through Oregon Department of Transportation Administrative Rules.

Open Burning Control Strategies

The Klamath County program includes a year around prohibition on agricultural open burning within the nonattainment area and within one-quarter mile of the nonattainment area boundary; a prohibition on highway right-of-way burning within the county, a prohibition on residential open burning on woodburning curtailment days, a voluntary agricultural smoke management program on farm lands within Klamath County and a voluntary forestry smoke management program on forest lands within approximately 25 miles of the nonattainment area. Additional restrictions under discussion with the Oregon Department of Forestry on slash burning may be included.

Industrial Control Strategies

Additional enforceable strategies include new rules designed to tightly manage industrial emission growth through reduction in the significant emission rate increase that triggers emission offset requirements for new or modified sources. The significant emission rate was reduced from 15 to 5 tons per year. The rule was adopted to assure that industrial emission growth beyond the current permit limits (Plant Site Emission Limit) does not jeopardize emission reductions gained through other strategy elements.

Contingency Measures

Measures to be implemented upon failure to attain the air quality standards by the December 31, 1994 Clean Air Act deadline include:

A. Woodburning Controls: State backup authority from the 1991 Legislature to require removal of noncertified woodstoves upon sale of a home; measures in the Klamath

County ordinance including mandatory fuelwood seasoning requirements on all firewood sold within the county; expansion of the Klamath County Air Quality Control Area to include the Keno - Midland area south to the California border; a prohibition on the installation of more than one woodstove in a new dwelling and removal of noncertified woodstoves upon sale of property.

Open Burning Measures: As a contingency, the County ordinance requires establishment of a mandatory agricultural open burning smoke management program. In addition, a mandatory forestry smoke management program implemented within Klamath County and surrounding forest lands is under discussion with the Oregon Department of Forestry. The mandatory forestry program would be implemented if slash burning smoke is found to be a significant contributor to PM₁₀ nonattainment.

Industrial Emission Control Measures: Industrial contingency measures proposed for adoption by the Department include requirements for the installation of new control systems which will meet the Clean Air Act RACT\BACT requirements. These will include bag filters on significant wood dust handling systems. Industrial sources located outside of the nonattainment area but within Klamath County's Air Quality Control Area will also be required to install RACT\BACT controls if their emissions have a significant impact on the nonattainment area.

Strategy Emission Reduction - 24-Hour Worst Case Day

Attainment of the 24-hour NAAQS in 1994 will require a 76% reduction in worst case day emissions equalling a reduction of 18,484 pounds per day. The needed reduction is achieved through the strategy elements listed below.

**Summary of 24-Hour Emission Reductions
To Be Achieved by 1994**

<u>Strategy Element</u>	<u>Credit</u>	<u>Emission Reduction</u>
New Road Deicing Practices	60%	1,308 Pounds/Day
Woodburning Strategies:		
- Woodburning Curtailment	90%	17,171 Pounds/Day
- Certification of Woodstoves	20	247 Pounds/Day
Woodstove Strategies, Total		<u>17,418 Pounds/Day</u>
Total reduction from all strategies.....		18,726 Pounds/Day
Required emission reduction		18,484 Pounds/Day

(Note: Because emission reductions are calculated on a declining balance basis, the product of percentage credits and total reduction (18,484 pounds/day) will not yield the individual element emission reductions shown. See Appendix 5)

EPA guidance specifies that no credits can be taken for the Klamath County public education programs nor can credits be taken for residential open burning restrictions since there are no accurate worst case day emission inventory estimates for this source. The 36% reduction (from 1987 levels) in winter worst case day PM₁₀ emissions has resulted in major reductions in both the amount of woodburned within the airshed and the number of households that rely on wood as their main source of heat but these credits have not been included since they are not enforceable. The above emission reduction credits are therefore conservative.

Strategy Emission Reduction - Annual Average Case

Attainment of the annual average NAAQS in 1994 will require a 40% reduction in annual emissions or a reduction of 753 tons per year. Although the entire needed emission reduction is achieved through the woodburning curtailment program, emission reductions obtained from the road deicing and other elements of the woodburning emission reduction programs are also included since they will occur as a result of implementing the 24-hour strategy. The needed reductions are achieved through the strategy elements listed below.

Summary of Annual Average Emission Reductions To be Achieved by 1994

<u>Strategy Element</u>	<u>Credit</u>	<u>Emission Reduction</u>
Highway Road Sanding Program	60%	18 Tons/Year
Woodburning Strategies:		
- Woodburning Curtailment	74%	761 Tons/Year
- Woodstove Certification	24%	177 Tons/Year
- Woodstove 20% Opacity	5%	54 Tons/Year
Woodstove Strategies, Total		<u>992 Tons/Year</u>
Total reduction from all strategies.....	1166	Tons/Year *
Total required emission reduction.....	753	Tons/Year

* Note: On an annual basis, the woodburning curtailment program will result in a 18% reduction in annual wood smoke emissions. This, however, is not reflective of annual air quality benefits of the program since the restricted ventilation during the curtailment periods compounds the benefits of the emission

reductions. The effective or equivalent reduction is calculated based on a 90% curtailment program operating on 47 days per year indicating a reduction of the annual average PM₁₀ concentration from 75 to 50.2 $\mu\text{g}/\text{m}^3$. As a result, the woodburning curtailment program alone, implemented on 47 days per year, will provide sufficient benefits to assure that the annual NAAQS is achieved. Additional strategy elements are claimed as a result of reductions achieved through the 24-hour strategy. See Section 4.12.3.3.

Air Quality Standard Maintenance

During the six year period following attainment of the NAAQS, a net decrease in emissions is projected to occur as a result of attainment strategies and the replacement of older conventional stoves with certified cordwood and pelletstoves, offsetting increases in fugitive dust and transportation emissions. Both the 24-hour and annual NAAQS are projected to be maintained to the year 2000 at which time worst case day and the annual average PM₁₀ air quality is projected to be 134 and 48 $\mu\text{g}/\text{m}^3$, respectively.

Enforceability

The Clean Air Act requires SIP control strategies to be enforceable. Based on EPA guidance, a woodstove curtailment program requiring more than a 30% credit must be based on enforceable measures in order for the SIP to be approved by EPA. Klamath County has adopted a mandatory curtailment program with an objective of achieving a 90% compliance rate in the 1991-92 heating season. The program and penalty provisions of the ordinance is enforced by the Klamath County Department of Health Service. In the event that local governments fail to implement a mandatory curtailment program, the Department has statutory backup authority to implement the program.

The highway road sanding program is implemented through commitments provided by the Oregon Department of Transportation; residential, highway right-of-way and agricultural open burning restrictions are implemented through the Klamath County ordinance. The voluntary forestry smoke management program is coordinated by the Oregon Department of Forestry.

4.12.0 State Implementation Plan for Klamath Falls PM₁₀ Nonattainment Area

4.12.0.1 Introduction

On July 1, 1987, the Environmental Protection Agency promulgated new federal ambient air quality standards for particles less than or equal to 10 micrometers in aerodynamic diameter (PM₁₀) to replace the Total Suspended Particulate (TSP) standard¹. The standard became effective 30 days later on July 31, 1987. On August 7, 1987, EPA classified Klamath Falls as a Group I PM₁₀ nonattainment area (52 FR 29383). The Clean Air Act Amendments of 1990 initially classified all PM₁₀ nonattainment areas (including Klamath Falls) as Moderate Nonattainment Areas. Air monitoring has shown that air quality within the Klamath Falls Urban Growth Boundary far exceeds the PM₁₀ National Ambient Air Quality Standards (NAAQS).

Section 110 of the Clean Air Act Amendments of 1990 requires states to adopt and submit plans (State Implementation Plans or SIPs) to EPA by not later than November 15, 1991. The Act allows EPA twelve months to approve or disapprove the plan. The plan must provide for attainment of the standard as expeditiously as practicable but no later than December 31, 1994.

The plan has been developed in consultation with officials of the City and County of Klamath Falls, the Oregon Department of Transportation, the Oregon Department of Forestry and the US EPA. The plan was prepared in accordance with the regulations and requirements of the Clean Air Act of 1990 and the US EPA. The Department believes that the PM₁₀ plan can achieve attainment of the NAAQS within the time frame required by the Act.

4.12.0.2 SIP Overview

This revision to the State Implementation Plan (SIP) has six sections. The first (4.12.1) provides a description of PM₁₀ ambient air quality in Klamath Falls; Section 4.12.2 describes the PM₁₀ air quality problem within the Klamath Falls Nonattainment Area; Section 4.12.3 describes emission reductions needed to attain NAAQS; Section 4.12.4 describes implementation of the control strategies, Section 5 described resource commitments and Section 6 discusses public involvement.

4.12.0.3 Area Description

Klamath Falls is located in south central Oregon at an elevation of 4,105 feet. The area is typified by its semi-arid,

¹A micrometer (μm) is a unit of length equal to about 1/25,000 of an inch. For comparison, the thickness of a human hair is about 100 to 200 micrometers.

high desert climate where annual rainfall is only 14.3 inches. The population of south suburban Klamath Falls within which the highest PM₁₀ concentrations are found is about 19,300 (1980 census) while the population within the Klamath Falls urban area is 36,500. About 13,600 households are located within the Urban Growth Boundary.

The Klamath basin is a relatively flat area of some several thousand square miles of old lake bed which is drained by the Klamath River. Upper Klamath Lake covers 132 square miles and has a surface elevation of 4140 ft above sea level. The Lower Klamath Lake area is a very large flat somewhat marshy region with an elevation of about 4100 ft above sea level. The region is punctuated by occasional hills and a system of elongated ridges aligned with a northwest-southeast orientation. These ridges may rise up to 2,000 ft above the basin floor. Two such ridges form a narrow opening at the out fall of Upper Klamath Lake.

The central business district of Klamath Falls is situated in this narrow opening at the southern end of Upper Klamath Lake where the elevation changes between the Upper and Lower Klamath Lake areas. Most of the Klamath Falls residential area, especially the south suburban area, is located on the lower elevation area. Thus it may be seen that the Klamath Falls area is confined by high terrain to the east and west. To the north is large expanse of Upper Klamath Lake and the flat terrain stretches for a number of miles to the south.

Figure 4.12.0-1 shows the boundaries of the Klamath Falls Urban Growth Boundary which was adopted as the nonattainment area boundary by the Environmental Quality Commission on June 2, 1989 (OAR 340-20-225 (22)). The criteria for selection of the UGB as the nonattainment area are as follows:

1. The nonattainment boundary must include the geographical area within which national ambient air quality standards are currently being exceeded. Air sampling studies completed in November, 1985, March, 1988 and January, 1989 have consistently show that minor day-to-day variations in the pattern of PM₁₀ levels exist depending on wind direction and the time of day of the survey. All surveys indicate a consistent pattern of maximum concentrations near Peterson School extending outward toward the downtown district, south toward Kingsley Field and westerly toward Green Springs Junction. The PM₁₀ levels appear to follow local topography with concentrations decreasing with increases in elevation. They also appear to follow the emission density of homes (woodstoves) in the area.
2. The nonattainment boundary must include the area within which air standards may be exceeded in the future. EPA requires that SIP control strategies consider future population, transportation, housing and industrial growth to assure that air standards will be attained and maintained. Development of a strategy to assure

maintenance of air standards therefore requires that the nonattainment area boundary be consistent with the regional planning boundary for which community growth projections are available.

3. The nonattainment area must be a legally defined boundary recognized by local governments. A legal definition is required for rule making purposes. Additionally, some component of the control strategy may need to be implemented through county land use planning ordinances tied to the Urban Growth Boundary.

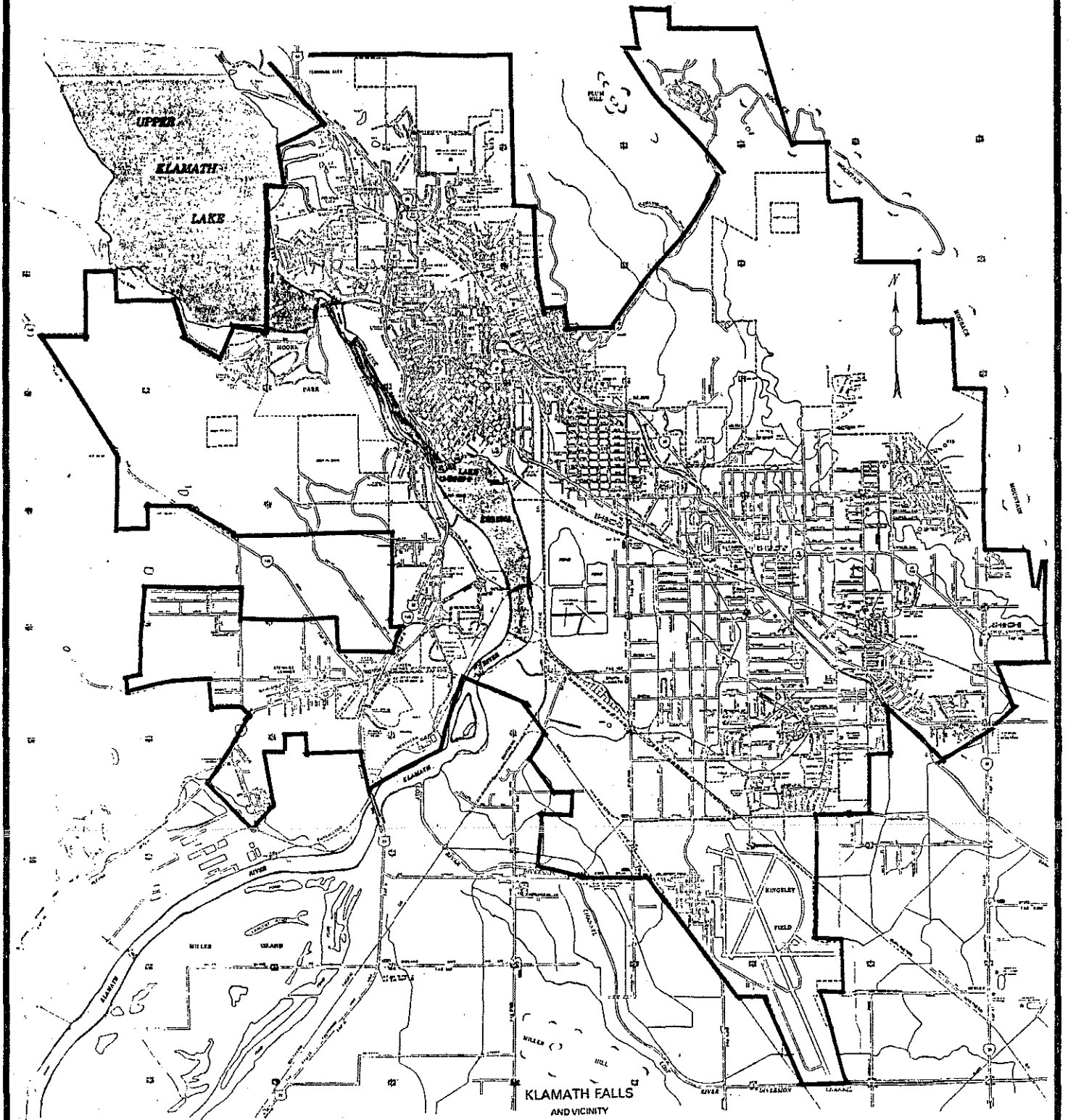
Designation of the Urban Growth Boundary as the nonattainment area is the only legally defined boundary that meets all of the above criteria. For purposes of wider control of woodburning emission within Klamath County, the Klamath County Clean Air Ordinance regulates woodheating emissions and open burning within and beyond the Growth Boundary.

4.12.0.4 Klamath Falls Meteorology

Because of it's elevation, dry climate and low frequency of cloud cover, Klamath Falls experiences very strong and shallow night time winter radiation inversions which break up with day time solar heating. In winter time, frigid arctic air masses frequently invade the Klamath Basin. Temperatures can remain well below freezing for several weeks at a time. Upper Klamath Lake often freezes over and 6 to 10 inches or more of snow may cover the ground.

Winter nights are commonly clear and cool in the Klamath Basin. Under these conditions, strong nocturnal radiation inversions occur as a result of the snow covered surface and frozen lake, creating extreme inversions over the south suburban area of Klamath Falls. These inversions are confined and maintained by the surrounding terrain. Inversions of as much as 10 °F have been observed within 60 ft of the surface, creating an impenetrable barrier to smoke from woodstoves and fireplaces. The highest smoke concentrations of any place in the State have been recorded in the Klamath Falls residential areas under these intense, shallow inversions.

Figure 4.12.0-1: Nonattainment Area Map



THE TWO SEE SEE 2148
WILLAMETTE STANDARD

KLAMATH FALLS
AND VICINITY
KLAMATH COUNTY, OREGON
PREPARED BY THE
OREGON DEPARTMENT OF TRANSPORTATION
IN COOPERATION WITH THE

— Urban Growth Boundary

4.12.0.5 Health Effects of PM₁₀ and Wood Smoke

Particulate matter measuring less than or equal to 10 micrometers is considered a risk to human health due to the body's inability to effectively filter out particles of this size. These particles deeply penetrate and become lodged in the alveolar regions of the respiratory system for days, weeks or even years where they trigger biochemical and morphological changes in the lungs².

For example, constriction of air passages (i.e., reduced air flow) occurs rapidly upon exposure to PM₁₀. Episodic and continuous exposure aggravates chronic respiratory diseases such as asthma, bronchitis, and emphysema which in turn restrict the lung's ability to transfer oxygen into the bloodstream. Traditionally, children, the elderly, and cigarette smokers are the most susceptible to lung dysfunctions and are therefore at greatest risk from PM₁₀ exposure.³ Episodic exposure can also cause changes in the activity of the lung's mucous secretions and accelerates the mucociliary action to sweep the particulates out of the lungs. This results in increased symptoms of cough, phlegm, and dyspnea (difficulty in breathing). Continuous exposure can inhibit this defense mechanism by introducing new particles into the lungs and redistributing those being swept out. This slows the clearance of the bronchial system thus increasing susceptibility to acute bacterial and viral infections.

The increased stress on the pulmonary system caused by PM₁₀ exposure is usually tolerable for those with healthy respiratory systems, however, it can lead to irreversible or fatal damage in people already suffering from cardiopulmonary disease, typically children, the elderly, the ill, and cigarette smokers.⁴ Another group that falls into the high risk category are people who breathe through their mouths.⁴ This group includes a wide range of people from chronic mouth-breathers to anyone involved in outdoor exercise and heavy labor. During mouth-breathing, particulate matter is breathed more directly into the lungs since it bypasses the filtering systems of the nasal passages.

Among the sources of PM₁₀ emissions, wood smoke is of particular concern in Klamath County because it accounts for a majority of the small particulate matter measured in the nonattainment area. A description of emission sources is found in

²J. Koenig, T.V. Larson, P. Jenkins, D. Calvert, N. Maykut and W. Pierson, "Wood Smoke: Health Effects and Legislation," Health Effects of Woodsmoke, Northwest Center for Occupational Health and Safety, January 20, 1988.

³U.S. Environmental Protection Agency, Second Addendum to Air Quality Criteria for Particulate Matter and Sulfur Oxides (1982: Assessment of Newly Available Health Effects. EPA 600/8-86-020.

Section 4.12.2.2. These particles are less than 1 μm in diameter and remain suspended in the air for long periods of time. Because of their small size and their ability to remain airborne, they are easily inhaled and lodged in the alveolar region of the lungs. These particles can also act as carriers for toxic chemicals which are transported deep into the respiratory system. Some of these toxics are then absorbed into the bloodstream.

Wood smoke contains at least fourteen carcinogenic compounds including benzo(a)pyrene, benzo(a)anthracene, and other polycyclic organic materials.⁴ Additionally, wood smoke contains several other hazardous compounds such as aldehydes, phenols, carbon monoxide and volatile organic vapors. These compounds can cause or contribute to illness ranging from neurological dysfunctions and headaches to lung cancer.³ Many of the components of wood smoke are also found in cigarette smoke and coke oven emissions and can affect the cilia in a similar manner making it difficult for the body to expel the particulate matter. Because wood smoke concentrations are highest in residential areas, a large segment of the population is routinely exposed to wood smoke pollution in the winter months. Additionally, it is those people who are most sensitive, children, the elderly, and the ill, who spend the most time in their homes, thereby increasing their risk.⁵

A study of lung function in 600 grade school children in Klamath Falls was conducted by the Oregon Department of Health and the Klamath County Department of Health Services just before, during and immediately following the 1990-91 woodheating season.⁵ Results from the study demonstrated that impaired lung function was associated with elevated levels of PM_{10} that occurred during the woodheating emissions. Studies conducted by the Department demonstrate that these high particulate levels are caused by wood smoke emissions.

4.12.1 Ambient Air Quality

Particulate ambient air quality monitoring for Total Suspended Particulate (TSP) began in Klamath Falls in November of 1969 at the Broad and Wall Street Fire Station. During the period of 1970 to 1986, annual average TSP concentrations averaged 66 $\mu\text{g}/\text{m}^3$ with maximum 24-hour TSP concentrations (which have occurred exclusively within the winter months) reaching 295 $\mu\text{g}/\text{m}^3$ in 1973. While these levels were over the TSP NAAQS, it was thought that rural fugitive dust (considered uncontrollable and not a health

⁴P.G. Jenkins, Washington Wood Smoke: Emissions, Impacts and Reduction Strategies, Washington Department of Ecology, Olympia, Washington. December, 1986.

⁵Klamath Falls Lung Function Health Study. State of Oregon Department of Health. June, 1991.

hazard by EPA) was the principal contributing source. To determine those areas that had a high probability of exceeding the PM₁₀ NAAQS, the US Environmental Protection Agency completed an analysis of historical Klamath Falls TSP data. The results of the analysis indicated a better than 95% probability that Klamath Falls PM₁₀ levels would exceed the NAAQS. Based on these findings, EPA has classified Klamath Falls as a Moderate Nonattainment Area. EPA regulations requires that daily PM₁₀ air quality monitoring must be conducted in such areas.

PM₁₀ air quality monitoring began in November, 1985 following completion of an area-wide survey designed to characterize the spacial distribution of PM₁₀ concentrations.⁶ Results from the study demonstrated that the Broad and Wall Street monitoring site was not representative of the highest levels of PM₁₀ in the airshed and that levels recorded at the Peterson School site in south suburban Klamath Falls better represented worst case levels within the area. The PM₁₀ concentration contours shown in Figure 4.12.1-1 were developed from the survey. The Figure also shows the location of the Peterson School site. A review of the area encompassed by the 150 $\mu\text{g}/\text{m}^3$ (the 24-hour NAAQS) contour shows that it best approximates the Urban Growth Boundary.

In February of 1987, monitoring at the Broad and Wall Street site was discontinued. PM₁₀ monitoring at the Peterson School site began in February, 1986. Additional PM₁₀ data was gathered during the November 1988 to April, 1989 period at Sixth and Hope Streets as additional verification of the extent of the high levels measured in the south suburban area.

In March of 1988 and February, 1989, the Department conducted evening mobile nephelometer surveys to further verify the spacial distribution of PM₁₀ concentrations. Figure 4.12.1-1 shows a typical distribution of concentrations measured during these surveys. Although the distributions of particulate mass vary slightly from day to day depending on wind directions and mixing height, the surveys are basically consistent with the findings of the February, 1985 particulate survey that identified the Peterson School area as the location of the highest concentrations. The surveys also provide evidence that the major sources of PM₁₀ are found within the residential area of south suburban Klamath Falls where the woodstove emission density is greatest.

⁶Special Study Report: Klamath Falls Particulate Survey.
Report 87-7. Program Planning & Development Section, Air Quality
Division, State of Oregon Department of Environmental Quality.
June, 1987.

4.12.1.1 Air Monitoring Methods

Several sampling methods have been used to measure PM₁₀ concentrations in Klamath Falls:

Integrating Nephelometer measurements of light scattering (a surrogate for PM₁₀) have been conducted during the winter months of highest PM₁₀ concentrations at the Peterson School site. This method provides hourly light scattering averages which are highly correlated to PM₁₀ concentrations measured using the high volume samplers equipped with size selective inlets (HV-SSI).

The PM₁₀ Medium-Vol. sampler collects PM₁₀ aerosol using a 12 port, 47 mm filter sequencing system that is programmed to collect 24-hour samples. The sampler pulls ambient air at a 4 CFM flow rate through a 10 μm Sierra-Anderson 254 inlet providing a PM₁₀ cut point. A dual-port system capable simultaneously collecting aerosol on both Teflon and quartz filter substrate is used to allow complete chemical analysis for Chemical Mass Balance receptor modeling purposes. Because of the excellent agreement between PM₁₀ concentrations measured by the Medium-Vol and the HV-SSI reference method, EPA has designated the Medium-Vol sampler as an acceptable equivalent method.

The PM₁₀ High Volume Size Selective Inlet (HV-SSI) is a High Volume air sampler equipped with a Sierra-Anderson SA321A, SA321B or SA1200 PM₁₀ cut-point inlet. This method has been designated by EPA as a reference method to be used to judge attainment with the NAAQS. Sampling occurs every 6th day.

The High Volume air sampler collects samples of Total Suspended Particulate (TSP). The method uses pre-weighted 8" X 10" filters through which air is drawn at 50 CFM over a 24-hour period. Because these samplers are not equipped with a size selective inlet, the upper limit of particle size captured on the filter may reach 100 μm. Prior to EPA's adoption of the PM₁₀ NAAQS, this method was the standard reference method for measurement of airborne particulate matter at the Broad & Wall Street site but has now been discontinued.

All of the data discussed herein was collected at the Peterson School site in south suburban Klamath Falls. Table 4.12.1-1 lists monitoring data collection periods by measurement method.

**Table 4.12.1-1: Data Collection Periods by Method
Peterson School**

Measurement Method	Began	Terminated
Integrating Nephelometer (Light Scattering or Bscat)	Jan. 30, 1985	Apr. 24, 1986
	Jan. 23, 1986	Apr. 15, 1986
	Oct. 23, 1986	Apr. 7, 1987
	Nov. 3, 1987	Apr. 20, 1988
	Nov. 1, 1988	Current
PM ₁₀ Medium-Vol. (MV) * (Daily Sampling)	Jan. 2, 1987	Apr. 3, 1987
	Nov. 30, 1987	Current
PM ₁₀ HV-SSI (SSI) (Every 6th Day)	Jan. 3, 1987	Current
High-Volume TSP (TSP)	Jan. 24, 1986	Oct. 6, 1987

* Both Teflon and Quartz filter substrate are used.

4.12.1.2 PM₁₀ Air Quality in Klamath Falls

Figure 4.12.1-2 illustrates the hourly and seasonal variations in PM₁₀ concentrations in Klamath Falls. As seen in the Figure, the highest 24-hour concentrations occur during the winter space heating season when PM₁₀ concentrations have reached levels as high as 792 $\mu\text{g}/\text{m}^3$. This exceeds the EPA Significant Harm level (the level at which an imminent and substantial risk to public health exists) of 600 $\mu\text{g}/\text{m}^3$. Peak 24-hour concentrations decrease dramatically during the spring months and reach a low of about 50 $\mu\text{g}/\text{m}^3$ during the summer months. Concentrations then raise again in the fall months as woodstove use increases and atmospheric dispersion decreases.

Review of PM₁₀ Concentrations

The four highest concentrations of PM₁₀ mass measured in Klamath Falls during the past 3 years are listed in Table 4.12.1-2, below.

Table 4.12.1-2: PM₁₀ Maximum Concentrations, 24-hour Averages

	$\mu\text{g}/\text{m}^3$	Date	M e t h o d
Highest Value	792	880125	Medium-Vol.
Second High	723	880203	SA321B HV-SSI
Third High	507	880122	SA321B HV-SSI
Fourth High	502	890120	Nephelometer Est.

Table 4.12.1-3 summarizes PM₁₀ monitoring data for the mid-1986 to mid-1989 period over which the design values were calculated. Appendix 1 contains a tabulation of daily PM₁₀ concentrations over the period of July 1, 1986 to June 30, 1989.

Table 4.12.1-3: Summary PM₁₀ Data
($\mu\text{g}/\text{m}^3$)

	All Data	1986*	1987	1988	1989	1990
No. Days Sampled	1414	343	365	303	195	208
Arithmetic Mean **	--	77	73	71	68	46
Maximum Value	792 (880125)	--	330	792	417	258
Second High	723 (880203)	--	298	723	400	236
No. Days > 150	155	40	38	29	27	21

* For period January 23 to December 31, 1986.

** Annual average values computed as prescribed in 40CFR52 Appendix K.

Hourly Variability

Hourly variations in PM₁₀ levels on worst-case winter days can be seen in the diurnal variations of light scattering measurements from the Peterson School site (Figure 4.12.1-2). Particulate concentrations begin increasing from a mid-day low, peak during the 11 PM to 1 AM period and then steadily decrease until 8-9 AM at which time the levels again reach mid-day concentrations. The early morning peak at 6 AM is believed to be associated with early morning woodstove start up by Klamath Falls residents.

Worst Case Day Characteristics

During the mid-1986 to mid-1989 period, the 24-hour NAAQS was exceeded an average of 47 days per year, exclusively during the months of late October to April. During these periods, residential woodheating reaches it's peak and atmospheric dispersion is at it's poorest. Worst case winter days typically have daily average temperatures of 10 °F (55 degree heating days), snow cover, intense, extremely shallow temperature inversions as low as 50 feet and extended periods of calm winds. These conditions occur during periods when snow producing storm systems are followed by stable high pressure systems. The spacial distribution of PM₁₀ concentrations during worst case day conditions is shown in Figure 4.12.1-1.⁷

⁷J.E. Core, "Distribution of PM₁₀ Within the Klamath Falls Nonattainment Area: Mobil Nephelometer Surveys of January, 1989," State of Oregon Department of Environmental Quality, Air Quality Division. Report 89-1. February, 1989.

Impacts from Sources External to the Urban Growth Boundary

The largest industrial sources within Klamath County located outside of the UGB is the Weyerhaeuser plant which emits a total of 631 tons of PM₁₀ per year, largely from hog fuel boilers used to generate steam for the plant. In spite of the magnitude of these emissions and the proximity of the plant to the Urban Growth Boundary, the Department does not believe that emissions from the plant have a significant impact on the nonattainment area. This is based on findings from two field measurement programs and receptor modeling analysis.

The spatial distribution of PM₁₀ levels measured during the mobil nephelometer surveys of January, 1989 indicated that concentration fell as the distance from the plant increased. These findings were confirmed by the saturation survey conducted in the Fall of 1985. If the plant had a major impact on the nonattainment area, concentrations should have increased as the distance from the plant decreased.

Receptor modeling analysis of source impacts at the Peterson School site confirm that hog fuel boiler impacts are small. This is based on studies indicating that the Chemical Mass Balance receptor model is able to quantify hog fuel boiler impacts at levels of 2 $\mu\text{g}/\text{m}^3$ or greater impact with relative uncertainties of $\pm 20\%$.⁸

These findings are consistent with the hypothesis that emissions from Weyerhaeuser's hog fuel boiler are emitted, on worst case winter days, above the very shallow inversions that form within the Klamath Basin. As a result, their ground level impacts would be expected to be small.

Background Air Quality

PM₁₀ aerosols from sources external to the UGB collectively contribute to background air quality or the concentration of PM₁₀ in the air mass as it is transported into the Klamath Falls Basin. The closest background monitoring site is located in the Quartz Creek Valley (elevation 5,390 ft) at the Quartz Mountain Gold Project 50 miles east of Klamath Falls.⁹

The Quartz Mountain data was collected by a Air Sciences, Inc. of Lakewood, Colorado under contract to the Quartz Mountain

⁸Pacific Northwest Source Profile Library: Volume 2 Final Project Report. J. Core, Editor. Department of Environmental Quality. September, 1989.

⁹Quartz Mountain Gold Project Environmental Impact Statement. Prepared for the Fremont National Forest by Air Sciences, Inc. Lakewood, Colorado. February, 1989.

mining project. The data was collected pursuant to Federal EIS requirements imposed by the US Forest Service, Bly District. The data was collected pursuant to standard EPA quality assurance requirements.

The Quartz Mountain background data during worst case winter days is representative of the Klamath Falls UGB for the following reasons:

1. The site is located in a remote area not influenced by sources within the Klamath Falls UGB yet not located at such distance that it would clearly not be representative of the regional air mass. Even if the site were located at the edge of the Growth Boundary, little change in the data would be expected because of the fact that lands immediately beyond the UGB are sparsely inhabited and largely of a wilderness nature.

2. A worst case winter day background of $7 \mu\text{g}/\text{m}^3$ is reasonable considering that the Quartz Mountain site is above the very shallow mixing height found in the nonattainment area, that snow cover eliminates windblown fugitive dust emissions and that there are no wildfires or slash burning emissions during the winter months. It is common to encounter long range visibility conditions at elevations of only a few hundred feet above the basin floor where the highest PM_{10} concentrations are found.

On an annual basis, there is little differences between the background levels at Medford's Dodge Road site ($12 \mu\text{g}/\text{m}^3$) and Quartz Mountain ($13 \mu\text{g}/\text{m}^3$), supporting the Department's belief that neither site are being unduly impacted by nearby sources; that the annual distribution of the data is not being unduly bias by high winter worst case concentrations and that both sites are representative of regional background.

PM_{10} monitoring at the Quartz Mountain site was based on GMW 2310 samplers with GMW 321-B inlets was conducted during the November, 1987 to November, 1988 period (108 observations) on a 6th day schedule. The annual arithmetic average was $12 \mu\text{g}/\text{m}^3$ while the worst case winter (November-March) observation was $7 \mu\text{g}/\text{m}^3$. The maximum observed value ($86 \mu\text{g}/\text{m}^3$) occurred on September 4th, 1988 when several forest fires were active in the area. The sources contributing to background PM_{10} concentrations are regional and global in nature.

The Quartz Mountain background air quality values used in the annual and 24-hour winter worst case control strategy calculations are $15 \mu\text{g}/\text{m}^3$ annual arithmetic average and $7 \mu\text{g}/\text{m}^3$ 24-hour average, respectively.

Aerosol Chemistry

Chemically, Klamath Falls winter-season PM₁₀ aerosol is composed of organic carbon (37%), elemental carbon or soot (6%), crustal elements (5%), other trace elements (2%) and secondary sulfate and nitrates (3%). The balance is associated oxygen, hydrogen, water and ammonium. While the winter season aerosol is chemically very similar to the composition of woodsmoke with small amounts of soil elements, the composition of the aerosol during the summer months is quite different and is largely composed of crustal elements (Al, Si, Ca and Fe). Lead concentrations are very low, averaging 0.1 µg/m³, 24-hour average. The aerosol composition cannot be used to directly infer source contributions.

4.12.2 Nonattainment Area Analysis

This section describes the Department's analysis of PM₁₀ air quality in Klamath Falls as it related to the National Ambient Air Quality Standards. Source contributions to the airshed's PM₁₀ air quality are discussed both in terms of emission strengths and source contributions to air quality as measured at the Peterson School site.

4.12.2.1 Design Values Determination

Attainment of the annual NAAQS requires that a control strategy be adopted which will reduce ambient concentrations from the 1992 design value to below the NAAQS; specifically that the expected number of exceedances of the 24-hour NAAQS not exceed 150 µg/m³ more than once per year averaged over three years.

The EPA PM₁₀ Development Guidelines specify that the preferred approach for estimating a design value is through the use of an applicable dispersion model corroborated by receptor models.¹⁰ If there is no applicable dispersion model and at least one complete year of PM₁₀ data is available, then the PM₁₀ data should be used to estimate the design value. This is the case for Klamath Falls.

EPA specifies that the annual design value should be calculated as arithmetic average of 3 years of PM₁₀ monitoring data and that the 24-hour design concentration should be estimated using the empirical frequency distribution for the largest available data base. Both the annual and 24-hour design concentrations must then be adjusted to compensate for emission

¹⁰PM₁₀ SIP Development Guidelines. US Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, N.C. June, 1987. EPA-450/2-86-001.

changes that will occur as a result of emission growth and control strategy affects likely to occur by 1994, the year in which attainment must be demonstrated.

The current design values are based on PM₁₀ data collected between mid-1986 and mid-1989. The information used to calculate design values is a composite of data collected over the year using a number of different PM₁₀ measurement methods in accordance with agreements reached with EPA Region X staff in December, 1989. As a result, a hierarchy of daily measurements has been used to build a composite data set. Reference method Medium-Vol. samples were selected first. Where these measurements were not available, reference method SSI data was used. If neither were available, non-reference method Medium Vol. data was used and if none of the above data was available, non-reference SSI data adjusted to a Medium-Vol. sampler equivalent value was used. If only integrating nephelometer scattering coefficient measurements were available, they were adjusted to medium-vol. equivalent values. This approach (1) greatly expands the database available for analysis; (2) provides a design value that is consistent with the measurement method that the Department will be using to determine NAAQS attainment and (3) assures that future receptor modeling analysis of PM₁₀ source contributions are consistent with control strategy design considerations. This approach is described further in Appendix 2.

Table 4.12.2-1: Design Values Summary

24-Hour Design Value, Graphical Procedure	550 $\mu\text{g}/\text{m}^3$
Annual Design Value	75 $\mu\text{g}/\text{m}^3$

4.12.2.2 Emission Inventory

Introduction

Emission inventories provide information on the relative strength of sources within an airshed and provide a basis for control strategy evaluation. In addition, emission inventories provide a basis for tracking emission reductions and growth. PM₁₀ emissions (usually expressed in tons of particulate per year or TPY) are calculated from emission factors and source activity records. Emission factors are the weight of pollutant emitted per unit weight of material processed such as grams of PM₁₀ emitted per pound of cordwood burned; pounds of road dust emitted per vehicle mile driven or pounds of particulate emitted per unit area of plywood veneer processed. Emission factors used in this

analysis are principally from the Environmental Protection Agency's compilation of emission factors AP-42.¹¹

Source activity information on the amount of cordwood burned by residents, vehicle miles driven or veneer production volumes are obtained from a variety of sources including industrial air contaminant discharge permits, public mail surveys and data gathered from other government agencies.

Estimation of seasonal or worst-case day PM₁₀ emissions requires development a of source operating schedule which describes the percent of annual emission that occur during specific seasons, months or 24-hour periods.

Base Year Emission Inventory

PM₁₀ emissions for the 1986 base year within the Urban Growth Boundary (UGB) were estimated for industrial sources, residential heating (gas, oil and wood), commercial space heating, residential open burning, agricultural field burning, paved and unpaved roads, construction and agricultural dust as well as transportation sources (cars, trucks railroads and aircraft). The basis of the emission estimates for the most significant sources are described below:

Industrial Sources: 189 TPY PM₁₀. These emissions are principally from the wood products industry wood-fired boilers and material handling. Twelve point sources, principally wood products, are included in the inventory. The largest source emits 100 tons per year of PM₁₀. The 1986 annual emissions are those that actually occurred during the year.

Residential Woodheating: 1,202 TPY PM₁₀. Information obtained from the Department's 1987 woodheating survey¹² and the County of Klamath Falls indicates that 13,600¹³ single family housing units are located within the UGB and that 73% of the housing units use woodburning devices. Approximately 75% of the devices are woodstoves while the remainder are fireplaces.

¹¹Compilation of Emission Factors, U.S. Environmental Protection Agency AP-42 Fourth Edition and subsequent supplements. US EPA Office of Air Quality Planning and Standards. Research Triangle Park, N.C. 27711.

¹²Oregon Wood Heating Survey for 1987: Klamath Falls Area. State of Oregon Department of Environmental Quality, Air Quality Division. February, 1987.

¹³Klamath County Planning Department Correspondence of May 4, 1990.

Figure 4.12.1-1: Klamath Falls PM₁₀ Distribution

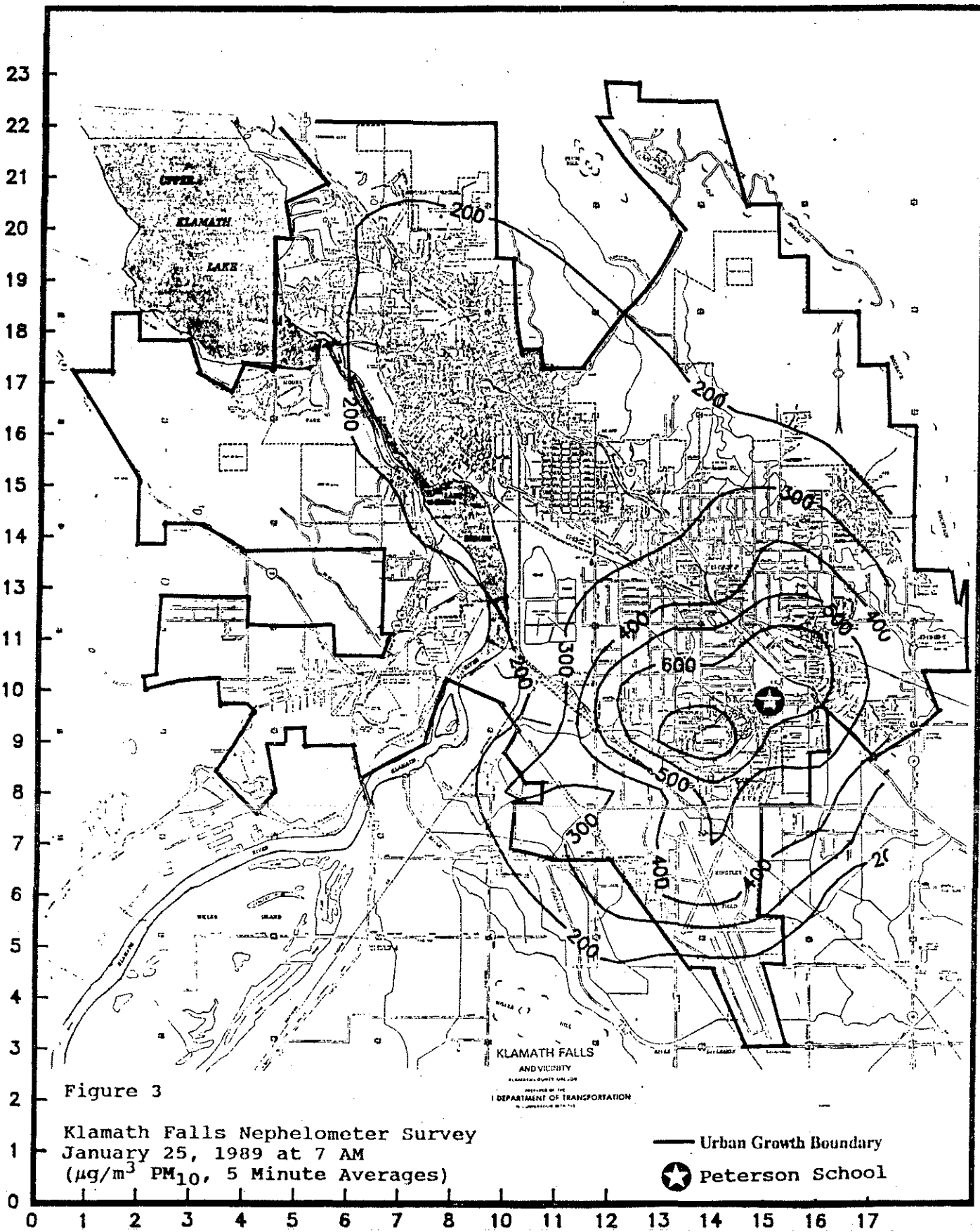


Figure 3

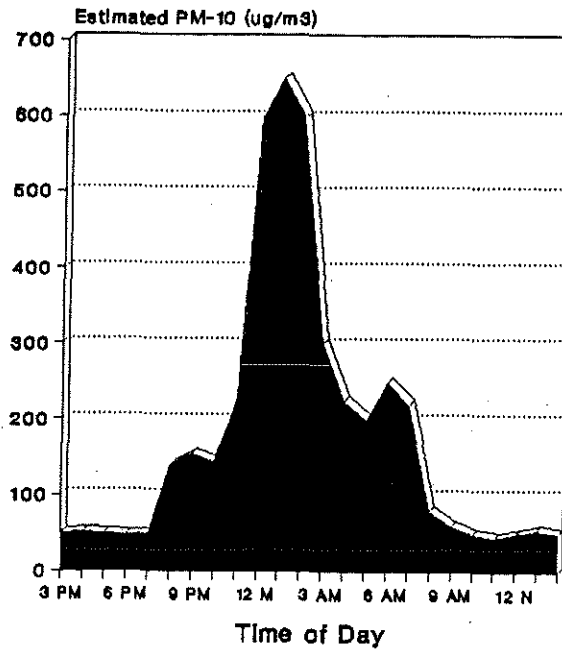
Klamath Falls Nephelometer Survey
 January 25, 1989 at 7 AM
 ($\mu\text{g}/\text{m}^3$ PM₁₀, 5 Minute Averages)

— Urban Growth Boundary

★ Peterson School

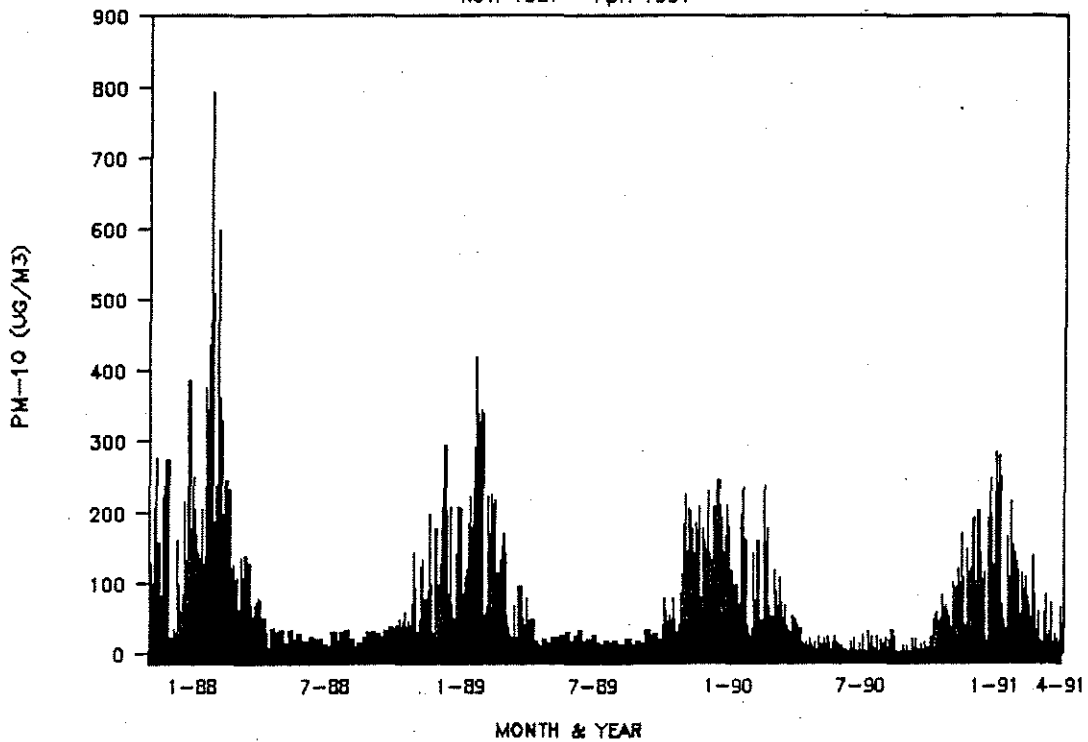
Figure 4.12.1-2: Diurnal & Seasonal Variations in PM₁₀ Levels

PM-10 Diurnal Variations Winter Season at Peterson School



KLAMATH FALLS PM-10 Levels

Nov. 1987 - Apr. 1991



The survey indicates that, on average, residents burn 4.1 cords/year of firewood in their woodstoves and 2.7 cords/year in fireplaces. At 39.9 pounds of PM₁₀ emitted per ton of wood burned in a woodstove, 1,076 tons of PM₁₀ are emitted per year. Fireplace emissions at 26.6 pounds per ton of wood burned total 126 TPY for a total 1202 tons per year. Based on the survey, about 12% of the woodstoves are DEQ-certified models. Forty six percent of those surveyed indicated that wood was the main source of heat in their home. Wood is the only source of heat in 4-5% of Klamath Falls homes.

The Department's 1991 woodheating survey (Appendix 6) indicates that worst-case day emissions have decreased by 36% because 23% fewer Klamath Falls residents are using wood as their main source of heat. The total number of cords burned has decreased by 53% since the 1987 survey¹⁴. As a result, annual and worst - case day PM₁₀ emissions have been reduced by 36% to 771 tons per year and 11,800 pounds per day, respectively. Since the emission reduction reflected in the 1991 survey are not based on legally enforceable measures, these emission reduction credits have not been included in the demonstration of attainment.

Backyard and Agricultural Burning: 173 TPY PM₁₀. Approximately 3,380 tons of backyard debris is burned each year generating 26 TPY of PM₁₀. This estimate assumes that 183 pounds of combustible material (principally yard debris) is burned per person each year during the months of March through November. Each ton of debris burned is assumed to emit 15.3 pounds of PM₁₀ particulate. Although (for purposes of the emission inventory) no backyard burning is assumed to occur during the months of December through February, local observations have confirmed that some burning is occurring on woodstove curtailment days. Agricultural burning also occurs within the UGB and, in early November, 1989 was occurring during woodheating curtailment periods. Agricultural Extension Service estimates that about 30% of the 8,000 acres of cereal grain fields within the UGB are burned annually. Assuming 3.8 tons of straw per acre, approximately 146 TPY of PM₁₀ would be generated by this source during the late summer and early fall. Other agricultural burning is known to occur outside of the UGB, but no reliable information is available to estimate emissions.

¹⁴Klamath Falls Wood Heating Survey, 1991. Klamath County Department of Health Services and the Oregon Department of Environmental Quality, Air Quality Division. July, 1991.

Fugitive Dust Emissions: 230 TPY PM₁₀. The principal sources of dust within the UGB on an annual basis are paved and unpaved road dust (112 and 53 TPY, respectively) and emissions from winter road sanding (27 TPY). Paved and unpaved road dust estimates are based on a 1985 estimate of 414,800 vehicles miles per day and an assumed PM₁₀/TSP ratio of 24%. There are 127 miles of dirt road and 68 miles of gravel road within the UGB.

Transportation Sources: 131 TPY PM₁₀. Highway vehicles (autos and trucks) emit 97 TPY PM₁₀ in tailpipe and tire wear particulate; off highway vehicles 12 TPY and railroad diesel engines, 19 TPY. Aircraft emissions are 3 TPY.

Table 4.12.2-2 and Figure 4.12.2-1 summarize annual PM₁₀ emissions within the UGB.

Table 4.12.2-2: 1986 UGB Annual Emission Inventory

Source	Tons/Year PM ₁₀	Percent
Industry	188	10 %
Residential Woodburning	1202	62 %
Commercial Space Heating	3	0 %
Solid Waste Disposal	173	9 %
Fugitive Dust	230	12 %
Transportation	131	7 %
Other Sources	9	0 %
Totals	1940	100 %

24-Hour Worst Case Day Inventory

Development of an inventory representative of emissions during 24-hour periods when PM₁₀ ambient air concentrations reach their highest levels is important to understanding the sources that cause winter season episodes. The relative proportion of emissions during these periods is expected to be quite different than those reflected in the annual emission inventory because some sources (such as agricultural burning) are not active while others (such as residential woodheating) are much stronger.

The 24-hour worst case inventory for the UGB is based on the following information and assumptions:

Industrial and Transportation Source. The 1986 worst case day industrial emissions are based on 1986 annual emissions increased by the ratio of the 1992 daily Plant Site Emission Limit (PSEL) (pounds/hour PSEL over 24-

hours) to the 1992 annual PSEL emissions. The 1992 PSELS are applied to 1994.

Residential Woodburning emissions are assumed to be proportional to the coolness of the weather as reflected in the degree heating days statistic tabulated by the National Weather Service. During the period of October, 1986 to October, 1987, the coldest day (January 9, 1986) had 47 degree heating days. Since the total degree heating days for this period was 6,109, this represents 0.76% of the annual total or 9.2 tons of PM₁₀ emission.

Winter Road Sanding emissions peak during periods when several inches of snow covers the area. During these periods, as much as 70 cubic yards per day of aggregate are spread on roads within the UGB. Because snow covers the roadways and landscape, essentially all of the fugitive dust emissions are assumed to originate from road sanding. Chemical analysis of PM₁₀ samples collected on days exceeding the 24-hour NAAQS indicated that 9% of the PM₁₀ mass was soil dust. Road sanding emission were therefore estimated to be of similar magnitude in the inventory or about 2,000 lbs/day during the 27 days per year when road sanding occurs. The worst case day emission estimates provide the basis for the annual emission estimate for road sanding.

As noted, road sanding emissions were based on chemical mass balance analysis of PM₁₀ samples, not on the basis of emission factors. This was done for several reasons:

(1) the CMB model can very accurately apportion soil dust impacts on actual worst case days. Even with the best possible emission factors, estimates of fugitive emissions are highly uncertain;

(2) Paved road dust emission factors are not appropriate since road surfaces are covered with packed snow;

(3) Initial calculations of emissions assuming unpaved road dust emission factors and the silt content of the aggregate used in road sanding resulted in unrealistic emission estimates far greater than the sum of all other air shed sources.

New information on winter road sanding emissions will be used to confirm the CMB derived estimate as it becomes available.

Table 4.12.2-3: 24-Hour Worst Case Emission Inventory
1986 Base Year Period.

Source	Tons PM ₁₀	Percent
Industry	0.75	6.6 %
Residential Woodburning	9.20	80.7 %
Commercial Space Heating	0.03	0.2 %
Fugitive Dust	1.00	8.8 %
Transportation	0.40	3.4 %
Other Sources	0.03	0.3 %
Totals	11.41	100 %

Appendix 3 provides a detailed annual and worst case 24-hour emission inventory listing.

Growth Factors

PM₁₀ emission growth factors are used to estimate future year emission inventories and source category impacts. Key indicators used to estimate future emissions include population growth, increases in transportation (vehicle miles traveled) and Plant Site Emission Limits (PSELs) for industrial sources. Transportation Growth, estimated at 1.5% per year is used to estimate increases in vehicular and road dust emissions.¹⁵

Population Growth data indicates that the number of people living within the Klamath Falls Urban Growth Boundary will increase by 1.1% per year from 37,000 to 39,500 by the year 1994.¹⁶ Population growth is used to proportionally increase residential open burning emission and woodstove use. The population growth rate used herein is consistent with those used by the Klamath County Planning Department.

Woodburning Emission Growth from woodstoves is expected to increase by 1% per year (8% total) by the year 1994 as a result of an increased amount of firewood burned and fireplace emissions are expected to decrease by 2% per year. The one percent growth rate is based on energy projections and fuel cost modeling performed to estimate future woodburning emission growth in the

¹⁵State of Oregon Department of Transportation Highway Division Planning Section estimate. February 22, 1989.

¹⁶Klamath Basin Wastewater Facilities Plan Update for the North Suburban Area of the City of Klamath Falls, Klamath County, Oregon. June, 1987.

Pacific Northwest.¹⁷ These projections do not account for emission reductions that will occur as a result of woodstove certification programs as these reductions are explicitly accounted for in the Section 4.12.3.2, Evaluation of Potential Control Measures.

Industrial Emission Growth has been projected to increase to the maximum permitted within their current Plant Site Emission Limits (PSELS). The 24-hour worst case growth factor is calculated as the increase from the 1986 actual hourly emissions to their hourly maximum PSEL emission rate over a 24-hour period.

Projected Emissions, 1986 to 1994

The 1986 annual and 24-hour emission and design value estimates must be adjusted to account for emission growth or decreases that may occur within the airshed during the eight year period of 1986-1994. Estimates are based on the emission growth factors described above. The information presented in Table 4.12.2-4 provides a basis for the future year source impact estimates (Section 4.12.3.1) which, in turn, provide the basis for the control strategy analysis. The emission estimates noted in the following tables have been prepared for 1992 but differ from 1994 emissions only with respect to residential woodburning emissions which would be expected to increase (assuming no strategies including stove certification are applied) by about 2% greater and fugitive dust emission which would increase by 3%. The 1992-94 estimated emissions are therefore essentially equivalent.

Table 4.12.2-4: 1994 Estimated Emissions

Source Category	-Annual- 1994		-24-Hr Worst Case- 1994	
	Tons	%	Tons	%
Industry	265	13 %	1.1	9 %
Residential Woodburning	1028	55 %	9.5	78 %
Fugitive Dust	211	10 %	1.1	9 %
Solid Waste Disposal	185	10 %	0.0	0 %
Transportation	141	8 %	0.4	3 %
Other	59	4 %	0.1	1 %
Totals	1888	100 %	12.2	100 %

Projected Emissions Beyond 1994

Analysis of the ability of the attainment strategies to maintain the NAAQS during the period 1994 to the year 2000 requires development of a third set of emission estimates. The

¹⁷U.S. Environmental Protection Agency, Region X "Residential Wood Combustion Study, Task 3, Fuel Wood Use Projections", EPA 910/9-82-089 (1984).

growth rates assumed for the maintenance analysis are based on the 1994 inventory adjusted to reflect the attainment strategy emission reductions:

- Population growth rate of 1.1% per year to residential oil, gas and wood combustion emissions; solid waste incineration emissions and structural fires;
- Transportation growth rate of 1.5% per year to transportation sources and paved, unpaved and construction dust as well as street sanding emissions;
- Industrial emissions are held constant at the annual and 24-hour PSEL emission rates shown in the 1994 emission inventory;

The projected residential wood combustion emissions, following application of a 1.1% per year growth rate, were adjusted to reflect emission reduction credits associated with the woodstove certification program. Information from the Klamath County Building Department indicates that approximately 100% of the new woodstoves being installed in new construction homes are certified and 20% of these are pelletstoves.¹⁸ Additional information from manufacturers suggests that certified pelletstoves sales should expand to a larger share of the market in future years. This may be, in part, supported by the fact that pelletstoves owners have not been asked to curtail burning during cordwood stove curtailment periods.¹⁹ Therefore, during the period 1994 to 1996, it is assumed that 80% of newly installed stoves are cordwood and 20% are pelletstoves. During the period 1996 to 2000, it is assumed that 50% are cordwood and 50% are pelletstoves.

Actual and projected annual emissions during 1994 to the year 2000 (assuming only woodstove certification) are listed in Table 4.12.2-5. Similar projected 24-hour worst case emissions are summarized in Table 4.12.2-6. Figure 4.12.2-2 shows changes in emission inventories during the period 1986 to the year 2000. If all of the strategy elements are applied, the year 2000 annual and 24-hour projected emissions were reduced from 1986 levels by 1184 tons per year and 17,183 pounds per day, respectively, through the implementation of mandatory curtailment; the woodstove certification program, opacity regulation, open burning controls and fugitive dust control programs.

¹⁸Correspondence from Klamath County Building Department of February 14, 1990.

¹⁹Personal communications with the Chairman, Association of Pellet Fuel Industries, Sparks, Nevada. February 22, 1990.

**Table 4.12.2-5: 1994 to Year 2000 Annual Emissions
Tons Per Year**

Source Category	1994	1996	1998	2000
Industry	264	264	264	264
Residential Woodburning	220	212	201	189
Fugitive Dust	192	197	204	209
Solid Waste Disposal	185	166	166	167
Transportation	141	144	147	151
Other	59	62	65	67
Totals	1062	1045	1046	1047

**Table 4.12.2-6: 1992 to Year 2000 24-Hour Worst Case Emissions
Pounds Per Day**

Source Category	1992	1994	1996	1998	2000
Industry	2246	2246	2246	2246	2246
Residential Woodburning	1344	1290	1174	1103	1045
Fugitive Dust	875	898	925	953	981
Solid Waste Disposal	0	0	0	0	0
Transportation	832	853	875	898	921
Other	130	133	136	139	142
Totals	5425	5418	5350	5330	5322

4.12.2.3 Source Contributions to PM₁₀

Development of strategies designed to attain and maintain the PM₁₀ NAAQS requires an accurate knowledge of contributions that sources make to the measured PM₁₀ aerosol mass. Two approaches are commonly used to estimate source contributions (1) atmospheric dispersion modeling and (2) receptor model analysis based on the properties of the aerosol measured at the receptor.

The Environmental Protection Agency PM₁₀ SIP Development Guidelines Section 4.4 describes procedures to be used by the states for using receptor models to estimate source contributions to PM₁₀ concentrations. These guidelines support the use of receptor models as an important element of the SIP strategy development process. Receptor modeling (specifically Chemical Mass Balance or CMB) is especially appropriate in Klamath Falls where severe air stagnation and complex terrain conditions likely make dispersion modeling inappropriate. The specific application of the

CMB Receptor Model to PM₁₀ source apportionment in Oregon's Group 1 areas is described elsewhere.²⁰

Chemical Mass Balance (CMB) is a form of receptor modeling based upon regression analysis of aerosol features such as trace element concentrations. The model attempts to find the most likely combination of source contribution estimates (SCE's) by minimizing the difference between the measured and model-predicted concentration of aerosol features. Values for the ambient aerosol matrix are obtained through chemical analysis of PM₁₀ filters taken at the Peterson School sites while the source "fingerprint" values are obtained through analysis of stack emissions. The CMB modeling protocol applied follows EPA guidance.²¹ All of the CMB modelling has been conducted using EPA's Version 7.0 CMB program.²²

Ambient Aerosol & Source Emission Analysis

Thirty eight PM₁₀ samples from the Peterson School site have been chemically analyzed for CMB analysis. Fourteen of the samples exceeded 150 µg/m³, all of which were collected during the winter months. The highest sample analyzed was 417 µg/m³ on January 19, 1989. Chemical characterization of the samples includes 19 trace elements analyzed by x-ray fluorescence, 3 anions and elemental/organic carbon, providing a data set that is compatible with the source emission profiles. Analytical uncertainties for each values are routinely reported and included in the CMB calculations. PM₁₀ source profiles representing all major emission groups within the airshed were used in the modeling. All of the profiles were obtained from the Pacific Northwest Source Profile Project.²³ A list of the sources included in the analysis is presented below:

²⁰PM₁₀ Receptor Modeling for Oregon's Group I Areas: Medford, Grants Pass and Klamath Falls. State of Oregon Department of Environmental Quality, Air Quality Division. February, 1990.

²¹Protocol for Reconciling Differences Among Receptor and Dispersion Models. US EPA 450/4-87-008. March, 1987.

²²Receptor Model Technical Series, Volume III (Revised): CMB User's Manual (Version 6.0) US EPA 450/4-83-014R. May, 1987.

²³Pacific Northwest Source Profile Library Project, Final Report Prepared by the State of Oregon Department of Environmental Quality, Air Quality Division. J. Core, Ed. September, 1989.

Table 4.12.2-7: Source Profiles

No.	Acronym	Description
1	KFSOIL	Resuspended soil dust from Klamath Falls
2	SLASH	Forestry slash broadcast burning (Also may be vegetative burning such as yard debris)
3	RWC MED	Residential wood combustion profile for Medford
4	LD AUTO	Light duty autos (leaded gasoline)
5	HOGFUEL	Hogfuel boiler burning plywood trim in the fuel
6	WOOD	Wood fiber including sander dust
7	HDDIESEL	Diesel exhaust (Fed. Test Cycle)
8	SECSO4	Secondary sulfate estimated as ammonium sulfate
9	SECNO3	Secondary nitrate estimated as ammonium nitrate
10	SECNH4	Secondary Ammonium ion
11	SALT	Road salt applied during the winter months
12	CONST	Construction dust - Medford Aerosol Study
13	VENEER	Steam heated veneer drier emissions

Receptor Model Source Contribution Estimates
24-Hour Exceedance Days

Table 4.12.2-8 is a summary of the source contribution obtained for the 14 samples that exceeded the 24-hour NAAQS. All samples were collected during the winter months. Figure 4.12.2-3 illustrates the results in graphical form.

Table 4.12.2-8: Average Winter Exceedance Day PM₁₀ Source Contribution Estimates

Source	PM ₁₀ (µg/m ³)	% PM ₁₀
Soil Dust	27.4	10.9 %
Wood Smoke	219.0	82.0 %
Transportation	0.2	0.1 %
Sec. Aerosol	10.7	3.2 %
Others	11.7	4.3 %
	269 µg/m ³	100 %

Other sources noted in Table 4.12.2-8 include water associated with the aerosol; minor contributions and uncertainties in the apportionment. Studies recently conducted in Los Angeles suggest that as much as 7% of the PM₁₀ mass is water.²⁴

No contribution from hogged fuel boilers was detected on these exceedance days. US EPA Chemical Mass Balance guidance specifies that the apportionment should account for at least 80%

²⁴S. Witz, R. Eden, C. Liu and M. Wadley, "Water Content of Collected Aerosols in the Los Angeles Basin," Presented at the Pacific Conference on Chemistry and Spectroscopy, Irvine, CA. October, 1987.

of the measured aerosol mass. Ninety-six percent of the mass has been apportioned in the above table. Average source contribution uncertainties (relative percent of mass) are 18% for wood smoke, 11% for hog fuel boilers and 8% for soil dust.

Annual Average Contributions

The annual average source contribution estimates noted in Table 4.12.2-9 were estimated from CMB analysis of PM₁₀ samples with mass loadings that approximate monthly average mass loadings. No data was available for September or November. The average mass loading of the analyzed filters is 77 $\mu\text{g}/\text{m}^3$ as compared to an actual annual arithmetic mean of 75 $\mu\text{g}/\text{m}^3$. Since the source contributions shown are based on a limited number of samples, the annual averages shown are only approximations of the true annual source contributions.

Table 4.12.2-9: Annual Average PM₁₀ SCE's

Source	PM ₁₀ ($\mu\text{g}/\text{m}^3$)	% PM ₁₀
Soil Dust	12.9	17.0 %
Wood Smoke	55.4	72.9 %
Industry	0.9	1.1 %
Burning *	1.4	1.8 %
Transportation	0.1	0.1 %
Sec. Aerosol	1.5	1.9 %
Others	3.8	5.0 %
	76 $\mu\text{g}/\text{m}^3$	100 %

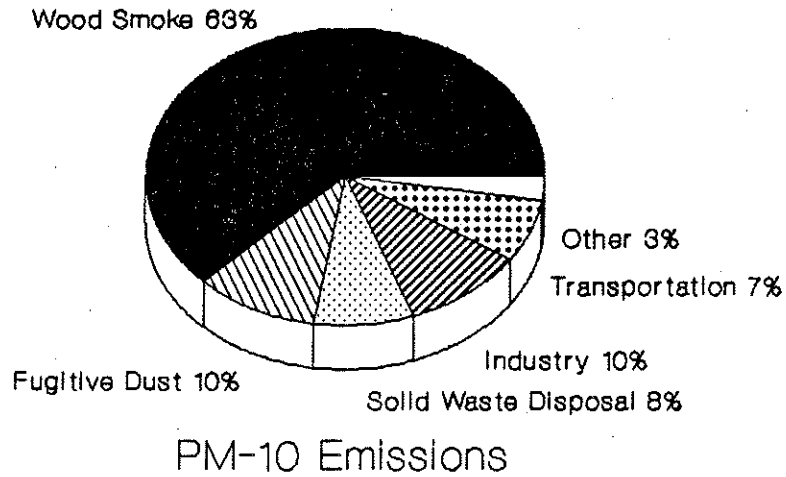
* Burning includes slash and field burning, land clearing and residential open burning.

Multiple Linear Regression Analysis

A second receptor modeling method of apportioning source contributions is multiple linear regression wherein the source contributions are estimated from variability in the aerosol chemistry. The MLR analysis was completed to determine the degree to which PM₁₀ mass concentrations could be predicted from the aerosol chemistry and as a second independent check on the CMB source apportionment. Based on 49 observations, 90% (R-Sq = 0.95) of the PM₁₀ mass variability can be accounted for on the basis of the aluminum (a tracer for soil dust), sulfate (a secondary aerosol) and organic and elemental carbon (from woodburning). The relative standard errors for the coefficients are 53%, 45%, 5% and 40%, respectively.

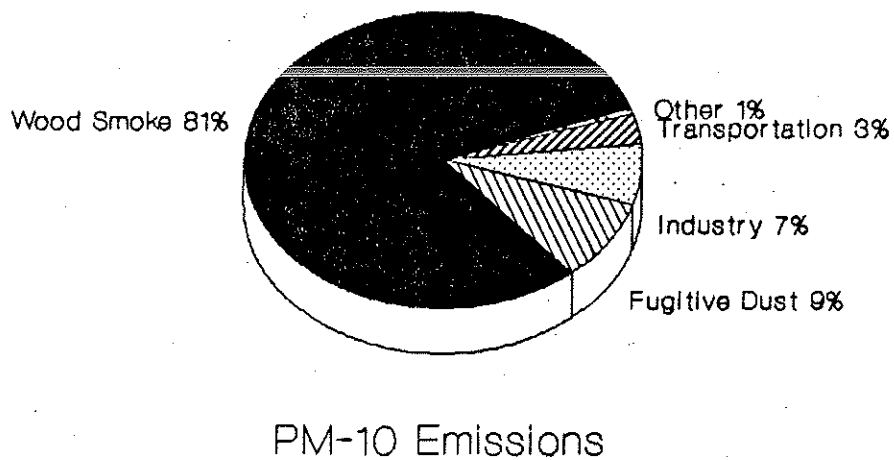
Figure 4.12.2-1: Klamath Falls PM₁₀ Emission Inventories

Klamath Falls Nonattainment Area Annual Emission Inventory



Calendar Year 1986

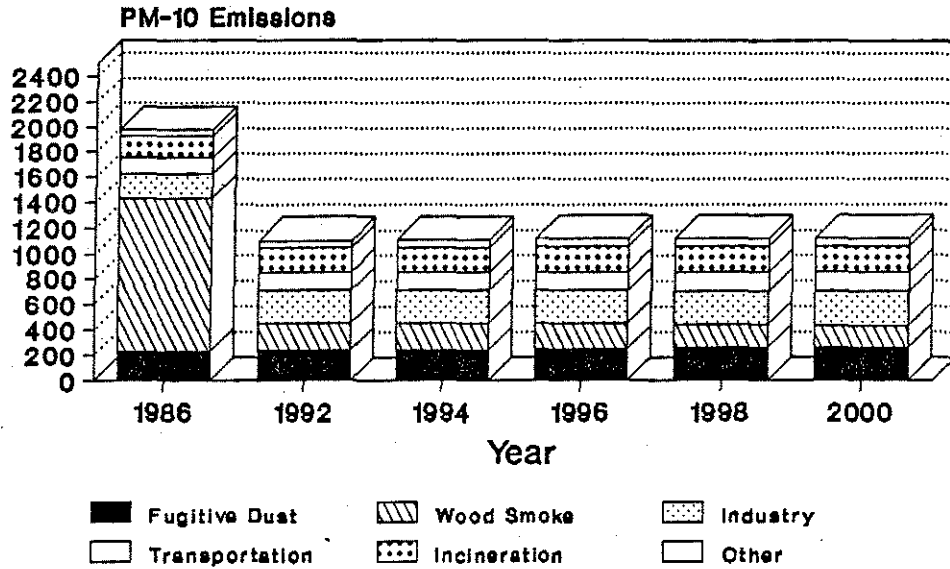
Klamath Falls Nonattainment Area Worst Case Day Emission Inventory



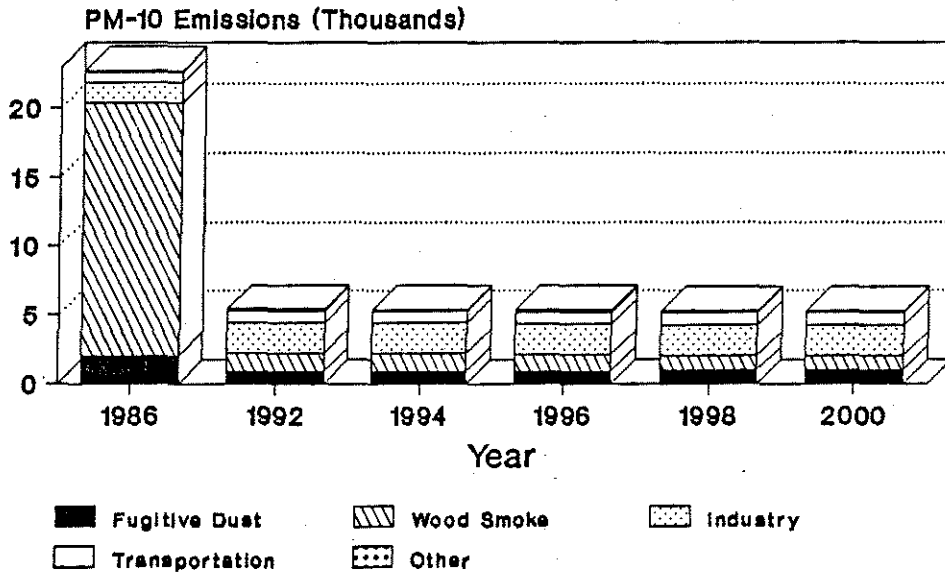
Based on 1986 Emissions

Figure 4.12.2-2: 1986 to 2000 Emission Projections

Klamath Falls Annual PM-10 Emissions 1986 to Year 2000



24 Hr Emissions Pounds Per Day



The results indicating that the PM₁₀ mass can reasonably be estimated from organic carbon, aluminum, sulfate and elemental carbon measurements. The regression equation is:

$$PM_{10} (\mu g/m^3) = 7.3(Al) + 6.4(SO_4) + 1.9(OC) + 1.0(EC) + 26$$

Source apportionment based on MLR analysis indicate that on typical winter days exceeding the 24-hour NAAQS 5.3% of the mass is soil dust, 7.7% is sulfate and 67% is wood smoke. These findings support the emission inventory and receptor modeling conclusions that soil dust and woodburning are significant contributors to Klamath Falls PM₁₀ levels during winter 24-hour worst case episodes. Since industrial emissions cannot be identified by any single aerosol component, industry contributions cannot be reliably estimated using this approach.

Analysis of Impacts by Source Categories

Receptor modeling of samples collected on days exceeding the NAAQS clearly show that residential wood smoke is the predominant source; that wood smoke varies from 69% to nearly all of the PM₁₀ mass and that these impacts are consistent with the aerosol chemistry observed within the airshed. These findings are also generally consistent with diurnal and seasonal variations in Klamath Falls PM₁₀ concentrations (Figure 4.12.1-2).

Comparisons between emission inventory and receptor modeling results has been used to provide a qualitative assessment of the relative significance of source categories. The source contribution estimates by these two methods for the winter 24-hour worst case and annual average periods are shown in Tables 4.12.2-11 and -12. They illustrate the generally close agreement between the source categories. The wood products industry contributions as estimated by emission inventory are higher than that estimated by receptor modeling because dispersion of the emissions is not considered. Transportation emissions are also somewhat higher than indicated by receptor modeling.

Background PM₁₀ Air Quality

Annual average background PM₁₀ air quality being transported into the Klamath Basin is estimated to be similar to background levels at the Medford Dodge Road monitoring site, about 15 $\mu g/m^3$ (see Section 4.12.1.2). This is similar to annual average background of 12 $\mu g/m^3$ measured at the Quartz Mountain PM₁₀ site southeast of Klamath Falls. The 24-hour average exceedance day background of 7 $\mu g/m^3$ apportionment is based on the percentage contributions found at the Peterson School site with very low PM₁₀ concentrations (11 $\mu g/m^3$) likely to reflect background sources.

Table 4.12.2-10: Background PM₁₀ Source Contributions

Source	Annual Ave. PM ₁₀ (μg/m ³)		24-Hr Ave. Exceedance Day	
Soil Dust	4.6	30.6 %	4.3	62 %
Industry	0.7	4.5 %	0.0	0 %
Wood Smoke	7.2	48.0 %	1.9	27 %
Sec. Aerosol	1.4	9.3 %	0.6	8 %
Others	1.0	6.6 %	0.2	3 %
	15 μg/m ³		7 μg/m ³	

Estimation of "Local" Air Quality Impacts

Estimation of the impact of emission sources within the UGB requires that background components listed in Table 4.12.2-10 be subtracted from the source contributions listed in Table 4.12.2-8 and 9. The difference between these two sets of estimates is the contribution of "local" sources identified in the emission inventories. Table 4.12.2-11 and 12 lists the "local" source contribution estimates (SCEs) to PM₁₀ mass average winter days which exceed the NAAQS and annual PM₁₀ mass loading, respectively.

Table 4.12.2-11: Average Exceedance Day "Local" PM₁₀ SCE's

Source	PM ₁₀ (μg/m ³)	% PM ₁₀	Emission Inventory
Soil Dust	23.1	8.8 %	9 %
Industry	0.0	0.0 %	7 %
Wood Smoke	217.1	82.8 %	81 %
Sec. Aerosol	10.1	3.8 %	----
Others	11.5	4.3 %	3 %
	262 μg/m ³	100 %	100 %

Table 4.12.2-12: Annual Average "Local" PM₁₀ SCE's

Source	PM ₁₀ (μg/m ³)	% PM ₁₀	Emission Inventory
Soil Dust	8.3	13.6 %	10 %
Industry	0.9	1.4 %	10 %
Wood Smoke	48.2	79.0 %	71 % **
Burning *	1.4	2.2 %	-----
Sec. Aerosol	0.1	0.1 %	-----
Transportation	0.1	0.1 %	7 %
Others	2.0	3.2 %	2 %
	61 μg/m ³	100 %	100 %

Table 4.12.2-12 Notes:

* Includes smoke from open burning occurring outside of the winter space heating season.

** Includes residential woodburning and solid waste disposal open burning.

The above analysis demonstrates that the 1986 emission inventory and receptor modeling analysis results are reasonably comparable. The validated emission inventories support the use of the 1992 emission inventory projection as the basis for the emission rollback calculations used in the attainment demonstration.

4.12.3 Emission Reduction Analysis

This section describes the emission reductions necessary to attain the NAAQS (4.12.3.1), a review of potential control measures that may be applied in Klamath Falls (4.12.3.2) and an assessment of the adequacy of the control measures to attain the NAAQS within the time limits specified by Section 110 (a) of the Clean Air Act (4.12.3.3).

4.12.3.1 Emission Reduction Necessary for Attainment

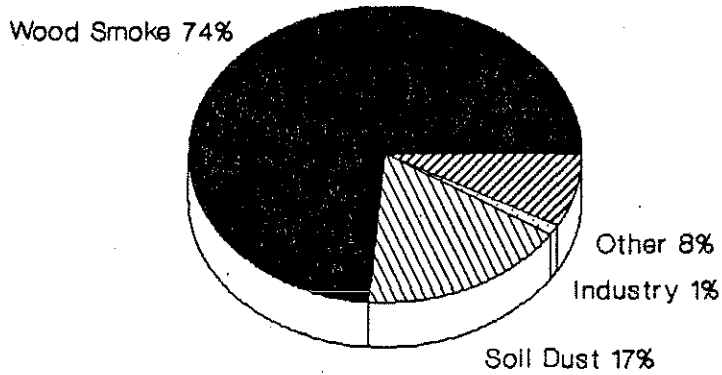
The EPA PM₁₀ SIP Development Guidelines specify that a proportional modeling method can be used to estimate the control strategy requirements of the SIP. In the analysis below, the contribution of emission sources to the 1994 design values have been apportioned based on the 1994 (assumed to be equivalent to 1992) annual and 24-hour worst case emission inventory estimates. Emission growth rates between 1986 and 1994 were first applied to each emission inventory source category. The sum of the 1994 source impacts plus background provide the 1994 24-hour worst case design value. A similar approach is taken to estimate 1994 annual emission reduction requirements.

Projected 24-Hour Source Impacts in Future Years

Table 4.12.3-1 lists 1994 source contribution estimates for the 24-hour worst case scenario. Source contributions at the 1994 design level were apportioned using the 1986 24-hour worst case day emission inventory percentages applied to the "local" PM₁₀ air quality level of 543 $\mu\text{g}/\text{m}^3$ (550 $\mu\text{g}/\text{m}^3$ design value less the 7 $\mu\text{g}/\text{m}^3$ background).

Figure 4.12.2-3: Klamath Falls PM₁₀ Source Contributions

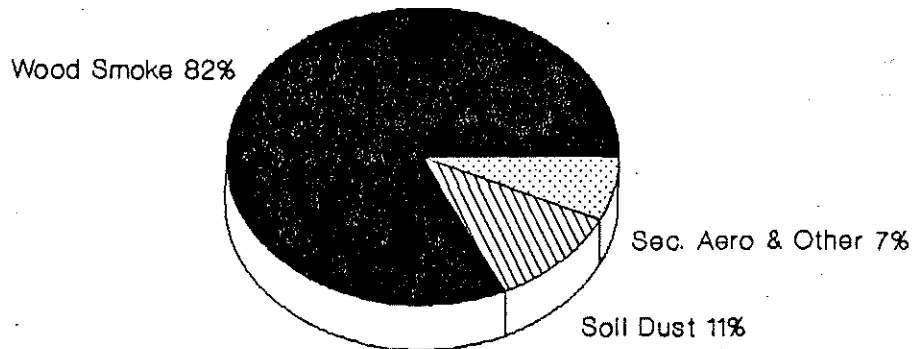
Klamath Falls Annual Source Impacts Chemical Mass Balance Estimates



Peterson School

Dec. 1987 - Jan. 1989

Klamath Falls PM-10 Typical Winter Worst Case Day



Peterson School

(Samples Greater Than 150 U_g/m³)

**Table 4.12.3-1: Projected Future Source Category Impacts
(24-Hr Worst Case)**

Source	1986 Worst Day EI	"Local" Design ($\mu\text{g}/\text{m}^3$)	1986-94 Growth (%)	1994 $\mu\text{g}/\text{m}^3$	1994 % "Local" PM ₁₀
Woodstoves	72 %	392	6.0 %	416	70.2 %
Fireplaces	9 %	46	-12.0 %	40	6.8 %
Industry	7 %	36	49.6 %	54	9.1 %
Fugitive Dust	9 %	48	9.0 %	52	8.8 %
Transportation	3 %	18	8.3 %	20	3.3 %
Other Sources	1 %	3	6.6 %	3	0.5 %
Subtotals		543		585 $\mu\text{g}/\text{m}^3$	
Background				7 $\mu\text{g}/\text{m}^3$	
Total				592 $\mu\text{g}/\text{m}^3$	

Air quality improvement needed = $442 \mu\text{g}/\text{m}^3$ ($592 - 150 \mu\text{g}/\text{m}^3$)
or a 75.5% [$442 / (592 - 7 \text{ bkgnd})$] in worst case day emissions
equivalent to 18,484 pounds per day.

The control strategy must be comprised of a mix of individual source reduction measures such that the sum of the reductions equal or exceed the total reduction requirement. Adopted control strategies must be shown through a demonstration of attainment (Section 4.12.3.3) to attain and maintain the NAAQS by reducing emissions such that an overall reduction in PM₁₀ 24-hour worst case concentrations is at least $442 \mu\text{g}/\text{m}^3$.

Projected Annual Source Impacts in 1994

Table 4.12.3-2 lists 1994 source contribution estimates for the annual scenario. Source contributions at the 1994 annual design level were apportioned using the 1994 (assumed to be not significantly different than 1992) annual emission inventory percentages applied to the "local" PM₁₀ air quality level of $60 \mu\text{g}/\text{m}^3$ ($75 \mu\text{g}/\text{m}^3$ design value less the $15 \mu\text{g}/\text{m}^3$ background).

Table 4.12.3-1: Projected Future Source Category Impacts
(24-Hr Worst Case)

Source	1986 Worst Day EI	"Local" Design ($\mu\text{g}/\text{m}^3$)	1986-94 Growth (%)	1994 $\mu\text{g}/\text{m}^3$	1994 % "Local" PM ₁₀
Woodstoves	72 %	392	6.0 %	416	70.2 %
Fireplaces	9 %	46	-12.0 %	40	6.8 %
Industry	7 %	36	49.6 %	54	9.1 %
Fugitive Dust	9 %	48	9.0 %	52	8.8 %
Transportation	3 %	18	8.3 %	20	3.3 %
Other Sources	1 %	3	6.6 %	3	0.5 %
Subtotals		543		585 $\mu\text{g}/\text{m}^3$	
Background				7 $\mu\text{g}/\text{m}^3$	
Total				592 $\mu\text{g}/\text{m}^3$	

Air quality improvement needed = $442 \mu\text{g}/\text{m}^3$ ($592 - 150 \mu\text{g}/\text{m}^3$)
or a 75.5% [$442 / (592 - 7 \text{ bkgnd})$] in worst case day emissions
equivalent to 18,484 pounds per day.

The control strategy must be comprised of a mix of individual source reduction measures such that the sum of the reductions equal or exceed the total reduction requirement. Adopted control strategies must be shown through a demonstration of attainment (Section 4.12.3.3) to attain and maintain the NAAQS by reducing emissions such that an overall reduction in PM₁₀ 24-hour worst case concentrations is at least $442 \mu\text{g}/\text{m}^3$.

Projected Annual Source Impacts in 1994

Table 4.12.3-2 lists 1994 source contribution estimates for the annual scenario. Source contributions at the 1994 annual design level were apportioned using the 1994 (assumed to be not significantly different than 1992) annual emission inventory percentages applied to the "local" PM₁₀ air quality level of $60 \mu\text{g}/\text{m}^3$ ($75 \mu\text{g}/\text{m}^3$ design value less the $15 \mu\text{g}/\text{m}^3$ background).

Table 4.12.3-2: Projected Annual Source Category Impacts

Source	1986 Annual EI	"Local" Design ($\mu\text{g}/\text{m}^3$)	1986-94 Annual Growth	1994 Annual $\mu\text{g}/\text{m}^3$	1994 % "Local" PM ₁₀
Woodstoves	55 %	33	-15 %	28	48 %
Fireplaces	6 %	4	-11 %	4	7 %
Industry	10 %	6	41 %	8	14 %
Fugitive Dust	10 %	6	4 %	6	10 %
Transportation	7 %	4	8 %	4	7 %
Open Burning	9 %	5	7 %	6	10 %
Other Sources	3 %	2	9 %	2	3 %
Sub Totals		60		58 $\mu\text{g}/\text{m}^3$	
Background				15 $\mu\text{g}/\text{m}^3$	
Total				73 $\mu\text{g}/\text{m}^3$	

Air quality improvement needed = 23 $\mu\text{g}/\text{m}^3$ (73-50 $\mu\text{g}/\text{m}^3$) or a 40% [23/(73-15 bkgnd)] reduction in 1992 emissions. This is equivalent to a reduction of 753 tons per year.

4.12.3.2 Evaluation of Potential Control Measures

The PM₁₀ control strategy for the Klamath Falls UGB focus on residential woodburning and winter road sanding fugitive emission dust control measures as well as public education programs, on-going restrictions on open burning, forest slash burning emissions reductions and management of industrial point source emission growth.

PM₁₀ Control Strategy Elements

The following control strategy elements have been adopted to assure attainment of the annual and 24-hour PM₁₀ NAAQS. Emission reduction credits associated with each element are listed and discussed. A PM₁₀ emission reduction credit is a measure of the reduction in PM₁₀ emissions that would be accomplished through adoption and implementation of the program element. The strategy elements and credits are further described in Section 4.12.3.3.

The emission projections listed in the following tables reflect estimated 1994 emissions. As noted in Tables 4.12.2-5 and -6, annual and worst case day emissions decrease slightly between 1992 and 1994 largely due to replacement of noncertified woodstoves. To assure a conservative analysis, the 1992 emission levels have been used in the following tables and demonstration of attainment analysis.

Table 4.12.3-3 PM₁₀ Control Strategies Elements

Element	Strategy	Emission Reduction Credits by 1994 24-Hr. Annual	
Attainment Strategies			
1	Woodstove Certification Program	20 %	20 %
2	Woodstove Curtailment Programs	90 %	74 % *
3	Winter Road Sanding Controls	60 %	60 %
4	Woodstove 20% Opacity Program	--	5 %
5	Public Education Programs	No Credit Taken	
6	Industrial Significant Emission Rate Offset Restrictions	No Credit Taken	
7	Forestry Slash Burning Emission Reductions & Restrictions	No Credit Taken	

* Equivalent Emission Reduction Credit - See Text

Residential Wood Smoke Control Elements

There are two basic approaches to reducing woodsmoke from stoves and fireplaces: (1) improving the performance of the woodheating systems such as through a certified woodstove program; and (2) burning less wood through woodstove curtailment programs. Some strategies have multiple advantages. Certified woodstoves, for example, improve emission performance by reducing the amount of woodsmoke per cord of wood burned while improving energy efficiency, thus reducing the amount of wood burned. Other examples are well designed public information, energy conservation, or firewood seasoning programs that result in better combustion (lower emissions) and better energy efficiency (less fuel burned). The key elements of the residential wood smoke control program are described below.

The Woodstove Certification Program

In 1983, the Oregon Legislature directed the Department to require that all new woodstoves sold in the State be laboratory tested for emissions and efficiency to assure compliance with established woodstove emission standards. As a result, stoves sold after July, 1986 were required to emit 50% less emissions than conventional woodstoves. After July 1988 new woodstoves were required to emit 70% less emissions.

Subsequent to the adoption of Oregon's emission standards, the Environmental Protection Agency adopted a slightly more restrictive national certification program which will become effective in July, 1990. In March, 1990, the Department completed rulemaking to modify the Oregon Woodstove Certification Rules (OAR 340 Division 21) to assure consistency with EPA's national program.

In-home studies of first generation certified woodstoves have indicated that they actually reduce emissions by about 30%. Second generation certified woodstoves have been shown to reduce emissions by about 50%. Their lesser than expected performance has to a large extent been due to durability problems with critical stove components. The majority of the stoves certified by the Department and sold in Oregon have been second generation stoves.

Second generation catalytic stove designs have incorporated new advancements in combustor technology which in part accounts for the stoves increased effectiveness. First generation catalytic stoves incorporated less effective catalytic elements which are currently reaching the end of their useful life. When replaced with new generation catalysts, the first generation catalytic stoves will provide effective emissions reductions approaching that of second generation stoves. These improved first generation stoves will make up in part the stove population in 1994.

Recent in-home studies have also shown that woodstove designs which met experimental durability criteria have demonstrated emission reductions averaging 79%. Durability criteria are those design features, and methods of construction which will help ensure that the initial emission performance achieved by a stove is maintained over it's usable life. Some of these units will also make up the woodstove population in 1994.

Additionally, sales of pelletstoves in nonattainment areas, as well as statewide, are reported to have significantly increased and are expected to accelerate in the foreseeable future. Pelletstoves provide a 90% reduction in emissions and are expected to become a significant segment of the woodstove population in nonattainment areas where they have typically been exempted from curtailment programs. Therefore, the Department is using a 50% emission reduction credit overall for the stove population of 1994.

RESIDENTIAL WOODBURNING

WOODSTOVES:

Residential woodstove emissions constitute 89.5% (1075 tons) of the total 1986 woodburning baseline emission inventory. Growth of residential woodstove use was estimated by comparing a study of projected firewood use, conducted by Del Green Associates, and actual woodheating surveys conducted by the department from 1981 through 1987. The Del Green projections can be used to estimate wood use growth from 1986 to 1994 at a 1% per year increase. This projection is conservative compared to the actual firewood use trends projected from the 1981 and 1987 woodheating surveys and represent a worst-case assumption considering the substantial (53%) reduction from 1987 levels in wood use reported in the Klamath Falls 1991 woodheating survey.

FIREPLACES:

Fireplace emissions in Klamath Falls represent 10.5% (126 tons) of the total 1986 baseline woodburning emission inventory. The emission impact from fireplaces has been separated from woodstove use in calculating the emission reduction benefit derived from the woodstove certification program. The Del Green projections for wood use trends in fireplaces estimates a 2% per year decrease in fireplace use from 1986 through 1994. This estimate is also conservative when compared to the actual firewood use trends for fireplaces from the 1981 and 1987 woodheating surveys.

PELLETSTOVES:

Residential pelletstoves are included as part of the 1986 baseline woodstove EI, and are expected to grow at a significantly accelerated rate in the near future. A conservative estimate of pelletstove growth is to assume a growth rate equivalent to cordwood stoves.

The following calculations are included in Appendix 5.

RESIDENTIAL WOODSTOVES

Basis for a 24.3% Woodstove Certification Program Credit

As noted above, firewood use in residential woodstoves is projected to increase by 1% per year over the 8 year period from 1986 to 1994. This is the basis of the growth factor used in calculating projected 1992 wood smoke emissions. Therefore, in the absence of any certification program, emission would increase by:

$$1\% \text{ per year} \times 8 \text{ years} = + 8\%$$

Building permit authorities in Klamath County indicate that essentially all permitted installations are certified stoves and that about 20% of these are pelletstoves. The 5% per year replacement rate for removal of conventional stoves and installation of certified stoves was confirmed in the 1991 Klamath Falls Woodheating Survey which found a replacement rate of 7%.

(1) For new certified cordwood stoves emitting 50% of conventional stoves, emissions would be expected to decrease over the period 1986-1994 by :

(a) Assuming 80% are new or replacement cordwood stoves:

$$80\% \times \{ [8\% \times (100\% - 50\%)] \times \text{BL86} + [5\%/\text{Yr.} \times 8 \text{ Yrs} \times (100 - 50\%)] \times \text{BL86} \} = 18.4\% (\text{BL86}) [\text{tons}]; \text{ Where BL86} = \text{Baseline emissions in 1986}$$

(2) For new certified pelletstoves emitting 10% of conventional stove, emissions would be expected to decrease over the period 1986-1992 by :

(a) Assuming 20% are new or replacement pelletstoves:

$$20\% \times \{ [8\% \times (100\% - 10\%)] \times \text{BL86} + [5\%/Yr. \times 8 \text{ Yrs} \times (100 - 10\%)] \times \text{BL86} \} = 7.88\%(\text{BL86}) [\text{tons}]$$

(3) The total emission reduction as a function of the 1992 uncontrolled woodstove emissions is:

$$\frac{\{18.4(\text{BL86}) + 7.88(\text{BL86})\}}{1.08(\text{BL86})} = \frac{26.28(\text{BL86})}{1.08(\text{BL86})} = 24.3\%$$

Where: $\text{BL92} = 1.08 \times \text{BL86}$

Therefore, the woodstove certification program alone provides a 24.3% credit by 1994.

RESIDENTIAL FIREPLACE EMISSION PROJECTION

Emissions from residential fireplaces are expected to decrease 2% per year from 1986 to 1994.

NET BENEFIT OF CERTIFICATION PROGRAM AND FIREPLACE TRENDS

Woodstove and Pelletstove Replacement:

Assuming 80% of replacement stoves to be certified cordwood stoves, and 20% pelletstoves; the net emission reduction from the 1986 base line will be 31.2 tons per year. This yearly reduction is applied consistently (not compounded) each year from 1986 to 1994.

$$[80\% \times (5\%/yr \times .5)] + [20\% \times (5\%/yr \times .9)] = 2.9\%/yr \text{ reduction.}$$

$$1986 \text{ woodstove baseline } [1076] \times .029 = 31.2 \text{ tons/yr.}$$

New Woodstoves and New Pelletstoves:

Assuming 80% of new certified stoves to be cordwood stoves, and 20% to be pelletstoves; the net emission increase due to growth will be 4.5 tons/yr. This yearly increase is applied consistently (not compounded) from 1986 to 1994.

$$[80\% \times (1\%/yr \times .5)] + [20\% \times (1\%/yr \times .1)] = 0.42\%/yr \text{ increase.}$$
$$1986 \text{ woodstove baseline } [1076] \times .0042 = 4.5 \text{ tons/yr.}$$

Residential Fireplace Trend:

Residential fireplace use is projected to decrease by 2% each year. This means a constant reduction of 2.5 tons per year, (not compounded) from the 1986 fireplace emission baseline.
 $[126 \text{ t/yr} \times .02] = 2.5 \text{ tons/yr.}$

Source Category	ANNUAL EMISSIONS BY YEAR (Tons)						
	1986	1987	1988	1989	1990	1992	1994
Existing Stoves	1076	1045	1014	982	951	889	814
New Stoves	0	5	9	14	18	27	36
Old & New Fireplaces	126	124	121	119	116	112	109
TOTAL	1202	1174	1144	1115	1085	1028	959

The net reduction due to the woodstove certification program, and fireplace usage trends (from the projected 1994 uncontrolled RWC emissions of 1252 tons) becomes 23.5% :

$$1 - \frac{[1994 \text{ controlled}] 959 \text{ tons}}{[1994 \text{ uncontrolled}] 1252 \text{ tons}} = 23.5\% \text{ reduction}$$

Maintenance Credits Beyond 1994

The credits claimed for the certification program beyond 1994 follow the same approach but are based on the fact that pelletstoves are likely to be an increasing proportion of the new stoves being installed. During the period 1992-1996, an 80%/20% cordwood/pelletstove mix is assumed increasing to a 50%/50% mix during the period 1996 to year 2000. Growth in new stoves is expected to increase to 1.1% per year, reflecting the projected population growth rate.

The stove replacement is expected to remain 5% per year, and fireplace use trends will continue at a 2.0% per year reduction. The calculated net benefits adjusted for emission growth provide a 98 ton reduction during the 1994-96 period, and an additional 113 ton reduction during the period of 1996 to 2000.

Maintenance Period 1994 through 1996

Replacement: Woodstoves and Pelletstoves

$$[80\% \times (5\%/yr \times .5)] + [20\% \times (5\%/yr \times .9)] = 2.9\%/yr$$

$$BL1994 [850 \text{ tons}] \times .029/yr = 24.6 \text{ ton/yr reduction.}$$

New: Woodstoves and Pelletstoves:

$[80\% \times (1.1\%/yr \times .5)] + [20\% \times (1.1\% \times .1)] = 0.46\%/yr$
 BL1994 [850 tons] $\times .0046/yr = 3.9$ tons/yr increase.

Fireplace: continue at -2%/yr. from the 1994BL. [109] $\times .02/yr$ = 2.18 tons/yr decrease.

	1994	1995	1996
Existing Stoves	814	790	765
New Stoves	36	40	44
Fireplaces	109	107	105
TOTAL	959	937	914

Net Emission Benefit for 1994- 1996:

[959 - 914] = 45.0 ton reduction

Maintenance Period 1996 through 2000

Replacement: Woodstoves and Pelletstoves

$[50\% \times (5\%/yr \times .5)] + [50\% \times (5\%/yr \times .9)] = 3.5\%/yr$
 BL1996 [811tons] $\times .035/yr = 28.4$ ton/yr reduction.

New: Woodstoves and Pelletstoves:

$[50\% \times (1.1\%/yr \times .5)] + [50\% \times (1.1\% \times .1)] = 0.33\%/yr$
 BL1996 [811 tons] $\times .0033/yr = 2.7$ ton/yr increase.

Fireplace: continues at -2%/yr. from the 1996BL. ([109] $\times .02/yr$) = 2.18 tons/yr decrease.

	1996	1997	1998	1999	2000
Existing Stoves	765	737	709	681	653
New Stoves	44	47	50	52	55
Fireplaces	105	102	99	97	95
TOTAL	914	886	858	830	802

Net Emission Benefit for 1996 - 2000:

[914 - 802] = 113 ton reduction.

The Klamath County Air Quality Program

Resolution 89-116, adopted August 31, 1988 by the Klamath County Board of Commissions established Klamath County's Air Quality Program under the direction of the County Health Department. The program was established to implement the Klamath County Air Quality Compliance Development Plan for the Klamath Falls City and Urban Growth Boundary which was adopted as Resolution 89-148 on April 19, 1989. On July 31, 1991, the Commission adopted a new ordinance establishing a mandatory woodburning curtailment program as well as enforced restrictions on open burning and other restrictions on airshed emissions. The City of Klamath Falls is expected to adopt an ordinance in September, 1991, that would implement the County air quality program within the city boundaries.

The program is funded by Klamath County at a level of \$112,600 per year (FY 91) and employs one full time Air Quality Coordinator and two administrative assistants. Effective in the Fall of 1991, two full time field inspectors will be added to implement and enforce the mandatory provisions of the Klamath County ordinance. Additional special project funds are provided by the Department to support major capital outlay and other one-time program needs. The Klamath County Program is found in Appendix 4. Key elements of the County program are described below.

1. Public Information Programs.

A comprehensive, professional, and well-financed public information program is essential for public cooperation and support in reducing woodsmoke emissions. The program clearly describes the need for the public's cooperation, the health-safety-energy-economic benefits to individuals and the community, and precisely what individuals can do to help. Key elements include: home weatherization, firewood seasoning, cleaner burning practices, proper stove installation and sizing, maintenance of woodburning systems and most importantly curtailment of woodburning during poor ventilation episodes. Although no emission reduction credits are taken for the public information program, it is critical to the success of all of the other woodsmoke reduction elements.

The Klamath Falls Air Quality education program fulfills all of these criteria. Key element of this aggressive program include:

- Television and radio public service announcements;
- Billboards, posters, brochures and road side signs;
- Neighborhood and house-to-house meetings promoting clean air and proper woodheating practices;

- Newspaper articles on clean air issues, Air Pollution Index (API) trends and woodburning curtailment calls;
- Advertising in newspapers and on radio;
- Wood smoke health effects studies and symposiums;
- Public classes and forums on proper burning methods;
- A voluntary firewood moisture certification program for fuel wood dealers;
- Coordination with advisory committees, woodstove dealers environmental and governmental groups;
- Operation of the Klamath County Burning Advisory telephone system which, during the 1990-91 heating season, answered 122,000 public calls. An additional 5,000 calls were handled by the Klamath County Air Quality staff.

EPA's Guidance Document for Residential Wood Combustion Emission Control Measures recognizes public education programs as an essential element of any residential woodburning control strategy. The highest level education program described by EPA is based on a comprehensive, aggressive program that includes all of the elements found in the Klamath County program described above. Although EPA recognizes public education programs as an essential element of woodburning control programs, no emission reduction credits can be assigned to the program without further technical justification.²⁵

2. Home Weatherization and Stove Replacement Program

In May, 1990 and in June of 1991, the City and County of Klamath Falls received awards totalling \$1.44 million from the State of Oregon Community Block Grant funds for a home weatherization and woodstove replacement program similar to the Medford CLEAR Project. Woodstoves in approximately 400 low income, sole source homes are being replaced by natural gas or electrical furnaces or pelletstoves and weatherized with grant funds under Klamath County's PURE project. Average cost of converting and weatherizing each home is \$2,200.

3. Curtailment During Poor Ventilation Episodes.

A mandatory woodburning curtailment program was adopted by the Klamath County Board of Commissioners on July 31, 1991

²⁵US EPA, "Guidance Document for Residential Wood Combustion Emission Control Measures," EPA-450/2-89-015 (1989).

following three years of a voluntary program. The program has been operated by Klamath County since 1988. The program has been designed to limit the use of woodstoves and fireplaces during periods likely to exceed the 24-hour NAAQS.

Woodburning curtailment forecasts are made twice daily at 7 AM and 4 PM during the woodheating season by the County Health Department. The forecasts are made daily between November 1st and April 1st. A "Yellow" forecast is issued if the 6 AM to 6 PM levels are forecast to be greater than 4.0 but less than 7.0 Bscat (equivalent to 81-150 $\mu\text{g}/\text{m}^3$ PM_{10}).²⁶ A "Red" forecast is issued if the 6AM-6PM forecast is for Bscat levels greater than 7.0 or 150 $\mu\text{g}/\text{m}^3$. The curtailment calls are based on criteria provided by the Department and are based on a forecast algorithm using National Weather Service upper air and barometric pressure data, forecasts of synoptic meteorology; surface temperatures and wind speed/direction. Nephelometer measurements of hourly light scattering and local observations of air quality conditions are also used. A detailed discussion of the curtailment methodology is found in Appendix 7.

Woodburning curtailment advisories are issued at three levels:

"Green" advisories are issued for periods during which NAAQS violations are unlikely. Woodburning is unrestricted during these periods but the public is asked to follow good woodburning practices. "Green" advisories are issued when PM_{10} levels are expected to be less than 80 $\mu\text{g}/\text{m}^3$, 12-hour average from 6 AM to 6 PM.

"Yellow" advisories are issued for periods approaching exceedance of the NAAQS. Under a "Yellow" curtailment, the public is asked to curtail all unnecessary woodburning, excepting only pelletstoves, certified woodstoves and those that use wood as their sole source of heat

"Red" advisories are issued for periods of severely restricted ventilation during which PM_{10} levels are expected to exceed the NAAQS. Only households in which woodburning is the sole source of heat are permitted to burn during these periods.

Based on the past three years of air monitoring data, about 47 curtailment days are expected to occur during the space heating season. Compliance with the advisories is determined through

²⁶Bscat measured by integrating nephelometer in units of 10^{-4} M^{-1} .

evening surveys of woodburning activity during "Green", "Yellow" and "Red" curtailment periods.

The goal of the Klamath Falls Woodburning Advisory Program is to achieve a 90% compliance rate on the 40 to 50 days per year on which violations of the PM₁₀ health standards would be expected. The Klamath Falls compliance rate during the first year of the mandatory program is expected to be similar to that reported for other mandatory curtailment programs such as the Medford, Oregon program which achieved an 85% compliance rate during the first months of the program.

4. Other Elements of the Klamath County Program

The Klamath County ordinance provides for a year around, 20% woodstove plume opacity (stove startup and shutdown periods exempted). The 5% emission reduction credit claimed for this program is based on EPA guidance.²⁷ Other elements include a phase-out of curtailment exemptions: sole source nonowner occupied dwellings by 1993 and owner occupied, low income sole source by 1998. All sole source households (except tenant occupied and low income) must have secondary heat sources by 1996. A ban on the sale of used, noncertified woodstove is also included in the ordinance.

Long-Term Woodheating Control Strategy

Woodheating curtailment is viewed as a short-range control strategy to allow rapid attainment of the short-term (24-hour) PM₁₀ air quality standard. The Department of Environmental Quality is committed to pursue permanent reductions in woodheating emissions as a long-range strategy to reduce and even eliminate the reliance on curtailment and to provide significant improvement in annual PM₁₀ air quality.

At least the following measures will be pursued to reduce permanently woodheating emissions:

- o Public education activities will include more specific information on the true cost of woodheating in relation to other alternative cleaner heating sources. The major goal of this effort is to persuade those households that are spending more money to heat with wood than with conventional fuels, such as natural gas, to convert from woodheat.
- o Further information and studies on the toxicity, health effects and other detrimental effects of woodsmoke will be pursued and heavily publicized in a continuing effort

²⁷US EPA, OAQPS, Guidance Document for Residential Wood Combustion Emission Control Measures. Appendix F. EPA 450/2-89-015. September, 1989.

to convince more people that they should reduce woodburning.

- o In home emission control performance of certified stoves will be improved through promotion of durable design criteria and development of a stress test which will aid in identifying durable certified stoves.
- o Financial incentive programs will be pursued through the Oregon Legislature and other avenues to promote replacement of conventional woodheating appliances with less polluting systems. These programs could include tax credits, low interest loans and total buyouts for low income households. An objective would be to graduate these incentives in proportion to the emission reduction potential of the alternative heating systems, with electric and gas systems qualifying for the largest financial incentives followed by pelletstoves, durable certified woodstoves and finally, other certified woodstoves.

Basis for Woodburning Curtailment Credits (Worst Case Day)

The highest reported compliance rates have been for mandatory curtailment programs in Washoe County, Nevada (90%), Juneau, Alaska (80-90%), Yakima, Washington (80%), and Missoula, Montana (70%). In the Medford area a 80% to 85% compliance rate was achieved in the first year of mandatory curtailment. The 90% emission reduction credit for Klamath Falls attainment is based on the above compliance rates.

Basis for Woodburning Curtailment Credits (Annual Emissions)

Annual emission credits taken for reductions made on the 47 curtailment days that occur, on average, each year have been estimated by two methods:

Reductions Based on Degree Heating Days were calculated by summing the product of the number of degree heating days that occurred on the 47 coldest days (most of which exceeded the 24-hour NAAQS) during the winter months, generally curtailment days (December, 1987 to March, 1989) and the total number of degree heating days per year to obtain the fraction of annual degree days that occurred on the 47 coldest days of the winter. This fraction (0.31) was then applied to the 1992 annual woodburning emission estimate of 1274 tons per year to obtain the total tons of emissions on curtailment days (398 tons). If emissions are reduced by 90% on curtailment days, than emissions should be reduced by 358 tons (90% of 398 tons) which represents 28% of the 1992 annual emissions. The curtailment program will therefore provide, at minimum, a 28% credit on an

annual basis. However if the fact that reductions occur during poor ventilation conditions is considered, much greater benefits are apparent.

Annual Air Quality Improvements of Curtailment are believed to be much greater than the above emission reduction credit would estimate because the emission reductions are occurring during the worst atmospheric ventilation periods of the year. To estimate the true annual air quality benefits of curtailment, actual PM₁₀ concentrations on winter days with PM₁₀ levels greater than 150 $\mu\text{g}/\text{m}^3$ (mid-1986 to mid-1989) were used to estimate daily PM₁₀ concentrations that would occur on curtailment days given the following: (1) a background PM₁₀ level of 7 $\mu\text{g}/\text{m}^3$; (2) 83% of non-background PM₁₀ is wood smoke and (3) the curtailment program will reduce woodsmoke concentrations by 90%. These PM₁₀ estimates were then used to recalculate the three year, annual average. Given these assumptions, the design value annual average of 75 $\mu\text{g}/\text{m}^3$ was reduced to 50.2 $\mu\text{g}/\text{m}^3$. Since the emission inventory rollback model estimates that a 756 ton per year emission reduction is needed to attain the annual NAAQS and given that the curtailment program alone will attain the annual NAAQS, the curtailment program will provide an equivalent emission reduction credit of 74% (756 TPY/1028 TPY). This is the basis for the 74% "comparable" emission reduction credit noted in Table 4.12.3-3.

State of Oregon Statute

The 1991 Oregon Legislature passed several measures in HB2175 which will be available as either as control strategies or contingency measures for the control of PM₁₀ emission from residential woodheating. These measures are outlined below:

Residential Woodheating Controls

I. WOODSTOVE CHANGEOUT PROGRAM (OAR 340 Division 34)

- A. The Residential Woodheating Air Quality Improvement Fund created under Section 10 of HB2175 provides for a two faceted program that offers both low, or no interest loans, as well as total subsidies for the replacement of noncertified woodstoves with alternate heat sources. The low/no interest loan program, available to woodheating households within the western interior valleys or any PM₁₀ nonattainment area, provides criteria under which a noncertified stove may be removed and destroyed, and a high efficiency, low polluting heating system installed to building code and manufacturers specifications.

- B. The subsidy program would fund local governments or regional authorities in PM₁₀ nonattainment areas to provide subsidies for the replacement of noncertified stoves. In order to receive funding a local government or control authority must meet eligibility criteria, among which is the adoption of an ordinance that limits visible emissions from woodstoves and fireplaces during periods of air stagnation. This provision does not restrict the establishment of a woodstove curtailment program if deemed necessary.

Both programs include eligibility requirements for individual applicant households.

Funding, and Resources:

Although the Residential Woodheating Air Quality Improvement Fund was established to provide resources for the Low/No Interest Loan, and Stove Subsidy programs the legislature did not authorize an emission fee on the sale of cordwood which would have provided funding.

The Department intends to fully pursue the funding of these programs through federal assistance grants and other grant sources. The Department also intends return to the 1993 legislative session and try to establish a permanent source of funding for these programs.

At such time as funding is provided the Department will provide staff resources to administer both program, and to fully analyze the most efficient and effective means of concentrating efforts on emission reduction in the most critical areas.

Emission Reduction:

Emission reduction benefits vary considerably depending upon the number of participants, and the type of replacement heating system selected. Stove replacement subsidy programs with a high degree of participation that are focused within a limited geographical area will see the most immediate benefit in improved air quality.

If a community were to participate in a local stove replacement subsidy program it would be possible for each household to achieve a reduction in PM₁₀ emissions of approximately 50% if un-certified stoves were replaced with EPA phase II certified stoves. If each household were to replace their un-certified stove with a gas furnace the emission reduction would be approximately 99%.

II. REMOVAL OF NONCERTIFIED STOVE UPON SALE OF HOME IN PM₁₀ NONATTAINMENT AREA EFFECTIVE DECEMBER 31, 1994 (OAR 340 Division 34)

The 1990 Clean Air Act requires states to revise PM₁₀ control strategies for problem areas to include contingency plans and other provisions to insure that PM₁₀ health standards will be achieved by specified dates. HB2175 requires that after December 31, 1994 all noncertified woodstoves, except antique and cookstoves, be removed and destroyed upon sale of a home. The Department views this program as a primary contingency measure for the overall PM₁₀ control strategies required by EPA.

The requirements of the statute are immediately enforceable through civil penalties by amending OAR Chapter 340, Division 12. By December 1994, the Department will also develop an advisory committee comprised of representatives from Oregon Title Companies, the Oregon Association of Realtors, and the State Real Estate Agency in Salem. The goal of the advisory group will be to outline the most efficient means to disseminate information about the sale requirements to all home sellers in the nonattainment areas, and to ensure that the stove removal and destruction requirement is carried out.

FUNDING AND RESOURCES:

The Department will commit staff resources to the enforcement of the statute where necessary. The Department will also coordinate the advisory group efforts to enhance the development and implementation of a comprehensive education and enforcement effort in each PM₁₀ nonattainment area.

EMISSION REDUCTION:

The long term emission reduction potential of the stove removal contingency strategy will vary depending upon the turn over rate of homes with uncertified stoves, and the choice of replacement heat. An evaluation of census information and surveys of real estate transactions estimates an average annual home turn over rate of approximately 3% per year, with the average home being owned for 20 years.

A random home replacement distribution over 20 years, at 3% per year would increase the replacement rate of noncertified stoves from 5% to 8%. The expected emission reduction from both stove replacement strategies may range from 50% cleaner in the case of a certified woodstove being chosen as the replacement

heating device, to 99% cleaner if a gas heater is chosen.

III. STATEWIDE WOODSTOVE CURTAILMENT (OAR 340 Division 34)

The 1991 Oregon legislature authorized the following program to be put in place in any area of the State where such a program is required under the Clean Air Act: If a local government or regional authority has not adopted or is not adequately implementing the Clean Air Act required woodstove curtailment program, the Environmental Quality Commission may adopt by rule and the Department of Environmental Quality may operate and enforce a program to curtail residential woodburning during periods of air stagnation. The curtailment program would apply to woodstoves, fireplaces, and other woodheating devices. The State curtailment program must include at a minimum:

- ◆ A provision for a two stage curtailment program based on the severity of the projected air quality conditions.
- A provision to exempt all Oregon certified woodstoves from the first stage of curtailment.
- ◆ A provision for low income exemptions.
- ◆ A provisional exemption for sole source woodburning households.
- ◆ An exemption for pelletstoves.
- ◆ A provision for the Department to defer the operation and enforcement of the curtailment program at such time as the local government or regional authority has adopted and is adequately implementing the required curtailment program.

FUNDING AND RESOURCES:

Should it become necessary for the Department to implement a State residential wood smoke curtailment program within a community the Department would seek assistance from the EPA to fund the necessary public education, daily advisory, monitoring, surveyance, and enforcement efforts.

The Department staff could provide support for a public education campaign, and distribute the daily burn advisory. The Department would explore the possibilities of contracting with local agencies to

provide services in the areas of monitoring, compliance surveys, and enforcement.

EMISSION REDUCTION:

EPA guidance regarding woodheating curtailment programs suggests that a minimum 10% credit for emission reduction can be taken for a voluntary curtailment program, and that a minimum 50% emission reduction credit may be taken for a mandatory program. The Department has had several years of experience establishing and monitoring curtailment programs in the Medford, Klamath Falls, Jackson County, and Grants Pass PM₁₀ nonattainment areas.

The Department's experience with curtailment programs supports that a 30% emission reduction credit is a reasonable estimate for a voluntary woodburning curtailment program. A mandatory curtailment program, given the proper effort in the area of community education and information is capable of attaining emission reductions in the range of 70% to 90%.

IV. USED STOVE BAN (OAR 340 Division 34)

The 1991 legislature enacted a ban on the sale of noncertified used woodstoves. As of the effective date of House Bill 2175 August 5, 1991 no person shall advertise for sale, offer to sell or sell, a used woodstove that was not certified for sale as new to the 1986 Oregon woodstove emission standard. Additionally, HB2175 has charged the State Building Code Agency to amend their administrative rules, prohibiting the installation of noncertified used woodstoves.

FUNDING AND RESOURCES:

The Department's Woodheating Program staff will investigate potential violations of the un-certified used stove sales ban, and with assistance from the Department's enforcement section will take the appropriate enforcement action when necessary. The Department's Public Relations section in conjunction with the Woodheating Program staff will mount a public education and information campaign to make the public aware of the new ban on used stove sales. The State Building Code Agency will enforce these regulations prohibiting the installation of noncertified used stoves.

EMISSION REDUCTION:

Our best information indicates that 1 out of every 4 stoves purchased is a noncertified used stove. Prohibiting their purchase and installation will ensure that the full emission credit potential offered by the normal change over to certified stoves will be realized. With the prohibition on un-certified used stoves each new stove purchase will provide at a minimum a 50% decrease in emissions or better depending upon the type of replacement heating device chosen. The 1991 Oregon Legislature adopted a new statute (HB2175) prohibiting the commercial sale of noncertified woodstoves and requiring the removal of conventional woodstoves upon sale of a home. Stove removal upon sale has been reserved as a contingency measure (see below) to be implemented in the event that the attainment strategy fails to achieve the NAAQS. Both measures greatly accelerate the woodstove changeover rate.

RACM Elements

Reasonably Available Control Measures (RACM) for Urban Fugitive Dust, Residential Wood Combustion and Prescribed Burning are defined by the EPA's April 2, 1991, Memorandum on PM₁₀ Moderate Area SIP Guidance. Further guidance is contained in EPA-450/3-88-008 (September, 1988), Control of Open Fugitive Dust Sources and EPA-450/2-89-015 (September, 1989), Guidance Document for Residential Wood Combustion Control Measures.

URBAN FUGITIVE DUST RACM MEASURES

EPA guidance requires that the following fugitive dust RACM elements be included in the PM₁₀ SIPs if the source is a significant contributor to PM₁₀ nonattainment and it is economically and technologically feasible to control:

(1) Pave, vegetate or chemically stabilize access points where unpaved traffic surfaces adjoin paved roads; (2) Require dust control plans for construction or land clearing projects; (3) Require haul trucks to be covered; (4) Provide for traffic rerouting or rapid clean up of temporary (and not readily preventable) sources of dust on paved roads (water erosion runoff, mud/dirt carryout areas, material spills, skid control sand). Delineate who is responsible for clean up;

(5) Prohibit permanent unpaved haul roads, and parking or staging areas at commercial, municipal, or industrial facilities; (6) Develop traffic reduction plans for unpaved roads using speed bumps, low speed limits, etc. to encourage use of other (paved) roads; (7) Limit use of recreational vehicles on open land (e.g., confine operations to specific areas, require use permits, outright ban); (8) Require improved material specification for and

reduction of usage of skid control sand and salt (e.g., require use of coarse, nonfriable material during snow and ice season); (9) Require curbing and pave or stabilize (chemically or with vegetation) shoulders of paved roads; (10) Pave or chemically stabilize unpaved roads;

(11) Pave, vegetate, or chemically stabilize unpaved parking areas; (12) Require dust control measures for material storage piles; (13) Provide for storm water drainage to prevent water erosion onto paved roads; (14) Require revegetation, chemical stabilization, or other abatement of wind erodible soil, including lands subjected to water mining, abandoned farms, and abandoned construction sites and (15) Rely upon the soil conservation requirements (e.g., conservation plans, conservation reserve) of the Food Security Act to reduce emissions from agricultural operations.

Fugitive dust control measures that have already been adopted by rule are found in Chapter 340, Division 21, Department of Environmental Quality. These rules apply within incorporated cities of 4,000 or more population and are enforce under OAR 340-21-060. These rules implement the following fugitive dust RACM measures:

<u>RACM Element</u>	<u>OAR 340 Division 21 Section:</u>
1	(2)(a)
2, 10, 11	(2)(b)
3	(2)(f)
4	(2)(g)
12	(2)(c)

In addition, the Klamath County Clean Air Ordinance requires implementation of RACM elements 4 (trackout) and 8 (winter road sanding). The contingency plan implements elements 3 (covering haul trucks), 7 (recreational vehicle use on open lands) and 14 (abatement of wind erodible soil).

REASONABLY AVAILABLE RESIDENTIAL WOOD COMBUSTION CONTROL MEASURES

EPA guidance requires that the State PM₁₀ SIPs include strategies from each of the following four RACM measures:

1. Establish an episode curtailment program, including: a curtailment plan; a communication strategy to implement the plan; a surveillance plan (e.g., "windshield" survey, opacity trigger); and enforcement provisions including procedures, penalties, and exemptions). A voluntary program will be deemed reasonable if the area demonstrates attainment.

The Klamath Falls mandatory curtailment program fulfills this requirement. Enforcement procedures, penalties and exemptions are found in the Klamath County Clean Air Ordinance.

2. Establish a public information program to inform and educate citizens about stove sizing, installation, proper operation and maintenance, general health risks of wood smoke, new technology stoves, and alternatives to woodheating.

The Klamath County public education program, as administered by Klamath County Department of Health Services, provides a comprehensive information on each of the elements of this RACM measure. This program is supplemented by the Department's public information program.

3. Encourage improved performance of woodburning devices by:

- Establishing a program to identify, through opacity observation, deficiencies in stove operation and maintenance. (Under such a program, advice and assistance should be provided to the identified households to help reduce visible emissions from their devices);

Klamath County's curtailment surveillance program is used both to assess compliance rates and to identify homeowners that are operating woodstoves with excessive emissions. The mandatory 20%, year around opacity program will identify those that need to improve stove operation.

- Providing voluntary dryness certification programs for dealers and/or making free or inexpensive wood moisture checks available to burners;

The Klamath County program includes a voluntary cordwood certification program implemented through local fire districts. A similar mandatory program is included as a contingency.

- Evaluating and encouraging, as appropriate, the accelerated changeover of existing devices to new source performance standards or other new technology stoves (e.g., hybrid designs, pelletstoves) by such approaches as subsidized stove purchases tax credits or other incentives.

Accelerated changeover is encouraged through the woodstove changeout program established under OAR 340 Division 34; through the phaseout of curtailment exemptions in the Klamath County ordinance and through the low

income home weatherization program operated by Klamath County (PURE).

4. Provide inducements that would lead to reductions in the stove and fireplace population (or use) by:

- Encourage a reduction in the number of woodburning devices (i.e., removing or disabling the devices) through tax credits or other incentives;

OAR 340 Division 34 includes, as a contingency measure, removal of noncertified stoves upon home sale.

- Discouraging the resale of used stoves through taxes, fees or other incentives;

OAR 340 Division 34 and the Klamath County Clean Air Ordinance includes a ban on the sale of used woodstoves.

RACM Measures not included in the Klamath Falls SIP include:

- Discouraging the availability of free (or very inexpensive) firewood by increasing cutting fees or limiting the cutting season.
- Slowing the growth of woodburning devices in new housing units by taxes, installation permit fees, or other disincentives;

REASONABLY AVAILABLE CONTROL MEASURES FOR PRESCRIBED BURNING

EPA guidance requires that RACM measures from prescribed (slash burning) be included where it is shown that prescribed burning is or does contribute significantly to PM₁₀ exceedances within the nonattainment area. The guidance specifies that such a program must include (1) smoke dispersion forecasts based (at minimum) on National Weather Service data; (2) a process for preparation and approval of burn plans; (3) availability of training programs for burners; (4) a public information program; (5) provisions for surveillance and enforcement of any mandatory requirements; (6) development of emission inventories; and (7) State oversight of the smoke management programs.

Oregon's forestry smoke management program administered by the Oregon Department of Forestry (ODOF) is administered through a voluntary program on forest lands surrounding Klamath Falls. The voluntary program meets all of the above RACM requirements. Smoke dispersion forecasts issued daily by ODOF's smoke management center for the Klamath Falls area are based on NWS and local weather data. The program requires the preparation and approval of burn plans prior to ignition. Training is provided each year by

ODOF staff to all burners. For Federal employees, this training is supplemented by training programs offered by the US Forest Service, the Bureau of Land Management and the National Park Service. ODOF and the Federal agencies all offer information on their programs to the public. Air monitoring surveillance is provided through the Department's programs and through aircraft plume tracking conducted by those conducting the burning. Emission inventories are developed in cooperation with ODOF using state of the art fuel consumption models. The Department oversees ODOF's program through periodic reviews and through ORS 477.515 which requires that the Director of the Department approve the program.

Fugitive Dust Control Element

A 60% reduction in emissions from winter road sanding is required to attain the 24-hour NAAQS on worst-case winter days. Sanding materials used in the Klamath Falls area are obtained from a gravel pit located near Merrill, Oregon where volcanic cinders, pea gavels, silts and clays have been deposited. Nearly all of the aggregate used within the UGB is applied by the Oregon Department of Transportation Highway Division, mostly on US 97, South Sixth Street, Alameda Bypass and the South Side Bypass. The City, County and State all maintain sections of Washburn Way and other streets in South suburban Klamath Falls. The City maintains streets within the Central Business District. Approximately 2,000 cubic yards of aggregate are applied each year by the Highway Division. The County and City use very little sanding material.

Three control options were evaluated: (1) processing of aggregate from the Merrill pit to remove silts and clays thereby reducing the amount of material to be entrained by traffic; (2) substitution of the Merrill aggregate with crushed gravel from hard rock sources located in the area or (3) use of a deicing slurry in lieu of road sanding and improved road sanding practices to minimize use of the aggregate consistent with public safety standards.

Basis for 60% Credit for the Winter Road Sanding Control Program

The specifics of the winter road sanding control strategy are contained in correspondence from the Oregon State Highway Division (Appendix 4). The 60% credit is based on the Highway Division's commitment to reduce winter road sanding by 60% through (a) replacement of aggregate with a deicing slurry; (b) reduction in the amount of aggregate used by maintenance crews and (c) rapid cleanup using street washing or sweeping of road sanding materials used on major thoroughfares. Streets included in the program are south Sixth Street, Alameda Bypass, Washburn Way, South Side Bypass and portions of US 97. During worst case winter days, a 1,300 pound per day emission reduction will occur. On an annual basis, road sanding emissions will be reduced by 18 tons per year.

Since all of the heavily traveled roads in the Klamath Falls UGB are paved, reductions in resuspended road dust from paved streets may also be considered should additional emission reductions be required. Other methods of control include the addition of asphalt shoulders and curbs to major paved streets thereby eliminating trackout from the edge of the pavement into the traffic lanes. The paving of unpaved roads and control of mud trackout from construction sites are additional strategies that may be useful.

In addition, the Klamath County ordinance provides for mandatory cleanup of trackout from unpaved areas onto State highway right-of-ways enforced through Oregon Department of Transportation administrative rules by the Highway Division.

Restrictions on Open Burning

The Klamath County ordinance contains the following open burning restrictions:

1. A year around prohibition on agricultural open burning within the nonattainment area and within one-quarter mile of the nonattainment area boundary. Elimination of these emissions results in a reduction of 146 tons per year of PM₁₀ and is the basis of the emission reduction credit noted in the annual NAAQS demonstration of attainment;
2. Prohibition of highway right-of-way burning within the county and residential open burning on woodburning curtailment days;
3. A voluntary agricultural smoke management program on farm lands within Klamath County coordinated by the Klamath County Farm Bureau was adopted in June, 1991 (Appendix 4). Burn\no-burn advisories are provided by Klamath County Air Quality during October 15 through March 15 of each year; cooperating operators monitor and report smoke transport conditions and record date, acreage and location of each field fire which is reported to Klamath County yearly.

In correspondence dated November 27, 1989 (Appendix 4) the Department requested that the State Fire Marshal direct the local fire districts not to issue open burning permits during periods when "Yellow" or "Red" woodburning curtailment advisories are issued by the Klamath County Department of Health Services. A cooperative agreement between the Klamath County Board of Fire Chiefs and Klamath County restricting open burning has also been adopted. The Department has further requested that land clearing and agricultural burning permits not be issued within approximately 30 miles of the Urban Growth Boundary during poor air quality days.

Forestry Slash Burning

PM₁₀ emissions from forestry slash burning, both because of the magnitude of the emissions and the proximity of the burning to the nonattainment area, can potentially have a significant impact on Klamath Falls air quality. Forestry burning is regulated under Oregon law (ORS 477.515) which requires that the State Forester and the Department of Environmental Quality jointly approve a plan to manage smoke from slash burning in areas they designate.

By statute, the Oregon Department of Forestry (ODOF) is responsible for the administration of rules (OAR 629-43-043) and written procedures to assure the protection of air quality. At present, the mandatory, daily burning instructions issued by ODOF apply only within the smoke management plan's Restricted Area which covers western Oregon (crest of the Cascades west) and the Deschutes National Forest.

Recognizing the need to protect the Klamath Falls nonattainment area from slash smoke intrusions, forest land owners surrounding Klamath basin have entered into a voluntary smoke management program (See Appendix 4). The voluntary program was adopted in April, 1990 and signed by all of the major forest land owners near Klamath Falls. The provisions of this program are coordinated by the Oregon Department of Forestry which provides daily smoke management forecasts and advisories for Klamath County, thereby meeting EPA's requirements for Reasonably Available Control Measures (RACM) for forestry smoke management programs.

In addition, the Visibility Protection Program incorporated as Section 5.2 of the Oregon State Implementation Plan includes as a goal a 50% reduction in western Oregon PM₁₀ prescribed burning emissions relative to the 1978-79 baseline emissions. These emission reductions are to be achieved in a reasonably linear manner over by the year 2000. Reductions are to be achieved through increases in wood waste utilization, rescheduling burning to spring-like fuel moisture conditions, application of mass ignition burning techniques, reductions in acres burned and accelerated mop-up of smoldering units. Although the emission reductions will occur west of the Cascades, the strategy will reduce impacts from forestry burning that may be transported into the Urban Growth Boundary from units burned on the Rogue River and Umpqua National Forests and BLM's Medford District.

Industrial Emission Growth Management

In June, 1989, the Department amended OAR 340-20-225 Significant Emission Rate provisions for industrial sources. The significant emission rate for new or expanding industrial emission was revised from 15 to 5 tons per year to assure that even

relatively small increases in industrial emissions would be offset by compensating emission reductions of an equal or greater amount. The tightened offset requirement assures that future industrial emission growth will not offset emission reductions achieved through elements of the attainment strategy.

Contingency Measures & Emission Reductions

Section 172(C)(9) of the Clean Air Act Amendments of 1990 Clean Air Act requires that the State Implementation Plan include contingency measures for significant sources of PM₁₀. These measures are to take effect without any further action by the State if the area fails to attain the PM₁₀ standard by the attainment date required by the Act. Contingency measures are triggered upon publication by EPA of notice in the Federal Register that the area has failed to attain the National Ambient Air Quality Standard for PM₁₀ by the attainment date required in the Clean Air Act. Depending upon the effectiveness of the control strategies, EPA could make this determination in 1994 or subsequent years.

The following elements have been included to fulfill this requirement of the Act:

Residential Woodburning Measures

1. State backup authority from the 1991 Legislature to require removal of noncertified woodstoves upon sale of a home. Rule to implement the statute are being proposed as a revision to OAR 340 Division 34. A similar provision is found in Klamath County ordinance Section 170.650(5);
2. Fuelwood seasoning requirement on all firewood sold with Klamath County implemented through the Klamath County ordinance Section 170.650(6);
3. Expansion of the Klamath County air quality control area to include the Keno - Midland area south to the California border implemented through the Klamath County ordinance Section 170.650(7);
4. Prohibition on installation of more than one woodstove in a new dwelling implemented through the Klamath County ordinance Section 170.650(9);

Fugitive Dust Control Measures

1. Prohibition on off road vehicle use on open fields and hillsides within the nonattainment area implemented through the Klamath County ordinance Section 170.650(4);

2. Dust control on public and private landfill sites, abandoned construction sites and quarries as well as lots without ground cover implemented through the Klamath County ordinance Section 170.650(3);
3. Requirements to cover haul trucks implemented through the Klamath County ordinance Section 170.650(2);
4. Construction sites within the nonattainment area required to have asphalt trackout strips to reduce trackout implemented through the Klamath County ordinance Section 170.650(3);
5. Requires establishment of a mandatory agricultural open burning smoke management program within Klamath County implemented through the Klamath County ordinance Section 170.650(8);

Industrial Emission Controls

The Department also proposes to adopt an industrial emission control contingency measure (OAR 340-21-200 to -255) requiring installation of RACT/BACT emission control systems on major sources in PM₁₀ nonattainment areas if attainment is not reached by the December 31, 1994, deadline of the Clean Air Act. In addition, under OAR 340-21-210(2), the Department is requesting Weyerhaeuser to conduct a receptor/dispersion modeling study by December 31, 1994, to determine whether emissions from the Weyerhaeuser facility have a significant impact (annual average impact of 1.0 $\mu\text{g}/\text{m}^3$, or 24-hour impact of 5.0 $\mu\text{g}/\text{m}^3$) at the maximum concentration point within the nonattainment area (Peterson School monitoring site). If the PM₁₀ impacts are determined to be significant, and if attainment is not reached by the December 31, 1994, deadline of the Clean Air Act, then RACT/BACT emission control systems will be required at the Weyerhaeuser facility.

Emission Reductions From Contingency Measures

Woodstove emissions would be reduced an additional 108 tons per year by the year 2000 through the contingency plan. Industrial emissions would be reduced an additional 132 tons per year (844 tons per year including industries outside of the Urban Growth Boundary but inside the Klamath County Control Area with significant impacts) through installation of RACT/BACT contingency emission controls. Additional reductions which cannot be quantified by the emission inventory would be achieved through fugitive dust control contingency measures.

4.12.3.3 Demonstration of Attainment

This section describes the application of emission reduction credits described in Section 4.12.3.2. in demonstrating attainment of the NAAQS. The calculations are based on proportional rollback of 1994 emission estimates. Appendix 5 contains the detailed calculations that support the following text.

Table 4.12.3-4: Summary of 24-Hour Emission Reductions To Be Achieved by 1994

<u>Strategy Element</u>	<u>Credit</u>	<u>Emission Reduction</u>
Highway Road Sanding Program	60%	1,308 Pounds/Day
Woodburning Strategies:		
- Woodburning Curtailment	90%	17,171 Pounds/Day
- Certification of Woodstoves	24%	247 Pounds/Day
Woodstove Strategies, Total		17,418 Pounds/Day
Total reduction from all strategies....		18,726 Pounds/Day
Required emission reduction		18,486 Pounds/Day

No credits have been taken for the Klamath County public education programs, the 36% reduction in woodburning emissions that have occurred since 1987 because of fuel switching, the woodstove changeout program, the voluntary forestry and agricultural smoke management programs or the other fugitive dust control elements included in the Klamath County ordinance.

Strategy Emission Reduction - Annual Average Case

Attainment of the annual average NAAQS in 1994 will require a 40% reduction in annual emissions or a reduction of 753 tons per year. Although the entire needed emission reduction is achieved through the woodburning curtailment program, emission reductions obtained from the road deicing and other elements of the woodburning emission reduction programs are also included since they will occur as a result of implementing the 24-hour strategy. The needed reductions are achieved through the strategy elements listed below.

**Table 4.12.3-5: Summary of Annual Average Emission Reductions
To be Achieved by 1994**

<u>Strategy Element</u>	<u>Credit</u>	<u>Emission Reduction</u>
Highway Road Sanding Program	60%	18 Tons/Year
Woodburning Strategies:		
- Woodburning Curtailment	74%	761 Tons/Year
- Woodstove Certification	24%	177 Tons/Year
- Woodstove 20% Opacity	5%	54 Tons/Year
Woodstove Strategies, Total		992 Tons/Year
Total reduction from all strategies.....	1166	Tons/Year *
Total required emission reduction.....	753	Tons/Year

* Note: On an annual basis, the woodburning curtailment program will result in a 28% reduction in annual wood smoke emissions. This, however, is not reflective of annual air quality benefits of the program since the restricted ventilation during the curtailment periods compounds the benefits of the emission reductions. The effective or equivalent reduction is calculated based on a 90% curtailment program operating on 47 days per year indicating a reduction of the annual average PM₁₀ concentration from 75 to 50.2 µg/m³. As a result, the woodburning curtailment program alone, implemented on 47 days per year, will provide sufficient benefits to assure that the annual NAAQS is achieved. Additional strategy elements are claimed as a result of reductions achieved through the 24-hour strategy. See Section 4.12.3.3.

4.12.3.4 Emission Offsets and Banking

Although the control strategy does not formally incorporate provisions for growth in industrial emissions through an emission offset and banking provisions, there is considerable growth margin for increases in industrial emissions within the current plant permits. The difference between the 1986 actual and the 1994 projected industrial emission projections is 77 tons per year in annual and 745 pounds per day in PM₁₀ emissions.

OAR 340-20-225 (22) requires that new or modified industrial sources that emit more than 5 tons per year of PM₁₀ emissions must obtain emission reductions from other sources to offset their emissions. The emission offsets may be obtained by reducing emissions within the facility to be modified, from other industrial sources or from external sources, including woodstove emissions from sole source, low income households. The Department estimates that an additional 100 tons per year could be obtained by reducing existing wood-fired boiler emissions by 70-85% to 0.03 grains per standard cubic foot and veneer driers by 42-70% to 0.3-0.45 pounds per thousand square feet of veneer (3/8" basis).

In addition, at least 175 tons per year of PM₁₀ emission offset is available by replacing conventional woodstoves in sole source, low income households with natural gas or electrical heating systems.²⁸

The emissions margins and sources of offsets will help assure continued maintenance of the NAAQS beyond 1994.

4.12.3.5 Demonstration of Maintenance

Emission reductions achieved through the adoption of a county ordinance banning the installation of noncertified woodstoves will assure that emission growth associated with fugitive dust and transportation sources will not cause the NAAQS to be exceeded by the year 2000. Appendix 5 lists emission projections for the six year period following attainment in 1994.

4.12.3.6 Emergency Action Plan Provisions

OAR 340 Division 27 describes Oregon's Emergency Action Plan. The rule is intended to prevent the excessive accumulation of air contaminants during periods of air stagnation which, if unchecked, could result in concentrations of pollutants which could cause significant harm to the public health. The rules establish criteria for identifying and declaring air pollution episodes below the significant harm level and were adopted pursuant to requirements of the Clean Air Act. The action levels found in the Plan were established by the Environmental Protection Agency and subsequently adopted by the Department.

The significant harm level for PM₁₀ particulate matter of 600 $\mu\text{g}/\text{m}^3$, 24-hour average (adopted by the Environmental Quality Commission April, 1988) was exceeded twice in Klamath Falls; on January 25, 1988 (792 $\mu\text{g}/\text{m}^3$) and on February 3, 1988 (723 $\mu\text{g}/\text{m}^3$). At the time of these events, the significant harm level was 1,000 $\mu\text{g}/\text{m}^3$ of Total Suspended Particulate, a level which was not exceeded.

The PM₁₀ "Alert" level is 350 $\mu\text{g}/\text{m}^3$; the "Warning" level is 420 $\mu\text{g}/\text{m}^3$ and the "Emergency" level is 500 $\mu\text{g}/\text{m}^3$, 24-hour average. These levels must be coupled with meteorological forecasts for continuing air stagnation to trigger the Action Plan.

Authority for the Department to regulate air pollution sources during emergency episodes is provided under ORS 468, including emissions from woodstoves. The provisions of HB2175 which authorizes the Department to regulate woodstoves are

²⁸Response to testimony received at the Klamath Falls public hearing on proposed changes to industrial rules. Attachment E to staff report prepared for the June 2, 1989 Environmental Quality Commission, Agenda Item H.

implemented under OAR 340-34-150 through - 175. These rules and statute give the Department authority to regulate woodstoves under emergency episode conditions. When there is an imminent and substantial endangerment to public health (the significant harm level), ORS 468.115 authorizes the Department, at the direction of the Governor, to enforce orders requiring any person to cease and desist actions causing the pollution. State and local police are directed to cooperate in the enforcement of such orders.

4.12.4 Implementation of the Control Strategy

Specific elements of the strategy were implemented as noted below.

4.12.4.1 Schedule for Implementation

The Oregon Woodstove Certification Program became effective June 30, 1986; the Klamath County Air Quality and voluntary woodburning curtailment programs were implemented on August 31, 1988 and the road sanding control strategy commitments were received from the Oregon Department of Transportation on December 11, 1989 and will be implemented during the winter of 1989-1990. Open burning restrictions implemented through the Oregon State Fire Marshal's office and local Board of Fire Chiefs began in November, 1989. The Department's Significant Emission Rate rules became effective on the date of adoption, June 2, 1989. Klamath County adopted their Clean Air ordinance on July 31, 1991 and the City of Klamath Falls adopted a resolution assigning air quality program enforcement within the city limits to Klamath County on August 7, 1991. Implementation of all of the provisions of the Klamath County program will begin in September, 1991. All of the program elements will be implemented prior to November 1, 1991, the beginning of the 1991-92 heating season.

4.12.4.2 Rules, Regulations and Commitments

The following rules and commitments have been adopted to assure the enforceability of the control strategies. The ordinance adopted by the City of Klamath Falls authorizes Klamath County to implement their ordinance within the city limits. Item marked with an asterisk (*) are contingency elements.

State of Oregon Rules

Woodstove Changeout Program	OAR Division 34
Ban on Used Woodstove Sales	OAR Division 34
Industrial RACT\BACT Controls *	OAR Division 21
Woodstove Removal on Home Sale *	OAR 340 Division 34
Mandatory Curtailment Authority *	OAR 340 Division 34
Woodstove Certification Program	OAR 340 Division 21
Klamath Falls Significant Emission Rate Rule	OAR 340-20-225'

Klamath County & City Ordinances

Klamath County Clean Air Ordinance	Ordinance 36
City of Klamath Falls Ordinance	**
Klamath County Air Quality Program	Resolution 89-116
Development Plan for the Klamath Falls UGB	

** Expected to be adopted in September, 1991.

Interagency Commitments

Winter Road Sanding Program, Oregon Department of Transportation Highway Division Memorandum of Understanding.

Oregon Dept. of Forestry Smoke Management Plan OAR 629-43-043
State Fire Marshall's Office Open Burning Statute ORS 478.960

4.12.4.3 Reasonable Further Progress

Part D of Title I of the Clean Air Act Amendments of 1990 (Section 171) requires that State Implementation Plans for PM₁₀ make Reasonable Further Progress (RFP) toward attainment of the National Ambient Air Quality Standards (NAAQS). The Act further specifies that RFP means those annual incremental reductions of PM₁₀ emissions necessary to attain the NAAQS by the attainment date. The Department believes that the scheduled implementation of the provisions of the Klamath Falls PM₁₀ SIP and attainment of the NAAQS within the Klamath Falls nonattainment area fulfills the FRP requirement of the Act.

4.12.4.4 Revisions to the Plan

In the event that the Klamath Falls area fails to meet Reasonable Further Progress milestones, or the applicable PM₁₀ attainment deadline, then the Department, as the designated lead agency, will first notify in writing the affected local governments and industrial organizations. Within 30 days of notification, the Department will complete a written analysis of control strategy commitments, evaluating the adequacy of implementation. Any deficiencies in implementation will be corrected through rulemaking, if necessary, within six months of the original deficiency notification. The six month time frame will accommodate the State's normal rulemaking process. Additionally, affected parties will be notified of the requirement to implement expeditiously the contingency measures, if necessary. As the lead agency, the Department will submit a plan revision that meets all relevant Clean Air Act and EPA requirements within 18 months of a notification from EPA that the area has failed to meet the attainment deadline and has been reclassified to "Serious."

4.12.4.5 New Source Review Permitting Authority

The New Source Review rules (OAR 340-20-220 to -276) and Air Contaminant Discharge Permit rules (OAR 340-20-140 to -185) identify the procedures for reviewing and permitting new sources. The significant emission rate for PM₁₀ emissions in the Klamath Falls Nonattainment Area is twenty five tons per year (OAR 340-20-225). The New Source Review rule (OAR 340-20-240) identifies requirements for sources in nonattainment areas, including applying the lowest achievable emission rate (LAER) and a 1:1 offset ratio, both required in the Klamath Falls Nonattainment Area.

4.12.4.6 Delegation of Lead Agency Authority

Barbara Roberts, Governor of the State of Oregon, has delegated the Department of Environmental Quality as the lead agency to implement, maintain and enforce the requirements of the Clean Air Act for PM₁₀ air quality in Klamath Falls.

4.12.5 Resource Commitments

Residential woodburning programs are being implemented by Klamath County with a FY 91 budget of \$112,600 to operate public information programs, the daily woodburning advisory, mandatory curtailment program including field surveillance and enforcement, and progress reporting. The Department operates the air monitoring network used by Klamath County for the daily woodburning advisory, provides public information assistance, and administers the woodstove certification program; these services are part of the statewide Department's base program identified in the State/EPA Agreement (SEA).

Financial assistance programs are available through Klamath County's Project PURE to assist low-income households in weatherization and replacement of conventional woodstoves with cleaner burning units; about \$1.44 million has been raised to date.

Industrial compliance assurance programs are implemented by DEQ as part of the statewide base program; resources are identified in the SEA. Open burning control programs are implemented by local fire departments, Klamath County and the Department as part of base programs.

Forestry slash burning programs are administered by the Oregon Department of Forestry, the US Forest Service, the Bureau of Land Management and other private forest land owners as part of their base programs.

4.12.6 Public Involvement

Development of the Klamath Falls PM₁₀ control strategy included several areas of public involvement including a continuing Citizen Advisory Committees, public participation at hearing on proposed industrial source rules and attendance at hearings conducted by the Klamath County Board of Commissioners.

Proposed industrial rules to reduce the significant emission rate for new or modified industrial sources within the Klamath Falls Urban Growth Boundary were approved by the Environmental Quality Commission on November 4, 1988. A public hearing on the proposal to reduce the significant emission offset from 15 to 5 tons per year PM₁₀ was held in Klamath Falls on February 15, 1988. The rule was adopted at the Environmental Quality Commission's April, 1989 meeting. Public hearings on the Klamath County ordinance occurred on July 10 and 31, 1991.

4.12.6.1 Citizen Advisory Committee

The Klamath County Board of Commissions appointed members to the Klamath County Air Quality Task Force in November of 1987 to assist the County and the Department in the development of control programs for the Klamath Falls Nonattainment Area. The 14 member committee was advised of the requirements of the Clean Air Act and State Implementation Plan. The Task Force considered alternative control strategies and provided recommendation to the Board in November, 1988. On January 26th and February 3rd, 1988, the Board of Commissioners held public hearings on a proposed county mandatory curtailment ordinance designed to achieve the degree of woodsmoke emission reduction required. Following the hearings, the ordinance was dropped from further consideration and a second 15 member Task Force (New Citizens Air Quality Committee) was appointed to consider other options, including development of a voluntary curtailment program. In May of 1988, the Committee submitted an outline for a voluntary curtailment program to the Department and the Klamath County Board of Commissioners and, in April, 1989, the Board adopted the Klamath County Voluntary Woodburning Compliance Program. In May of 1991, the Klamath County Board of Commissioners asked the County Department of Health Services to begin preparation of a comprehensive ordinance to include a mandatory curtailment program. The draft ordinance was reviewed by the County's Advisory Committee, the Department and the County Board of Health prior to the first public hearing on July 10, 1991.

4.12.6.2 Public Notice

Public notice of proposed rule revisions is done through mail lists maintained by the Department, through notifications published in local newspapers and through Department press releases.

4.12.6.3 Public Hearings

As noted above, public hearings on the Klamath County Plan were held on January 26 and February 3, 1988. A hearing on revisions to the industrial rules on significant offset emission rates was held February 15, 1988 and public hearings on proposed woodstove legislation were held before the Senate Agriculture and Natural Resources Committee on several occasions in February and March, 1989. Hearings on the Klamath County ordinance including the mandatory curtailment program occurred on July 10 and 31, 1991.

4.12.6.4 Intergovernmental Review

Public hearing notices regarding adoption of this revision to the State Implementation Plan will be distributed for local and State agency review through the A-95 State Clearinghouse process forty-five days prior to adoption by the Environmental Quality Commission.

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RPT\AH15036
(8/14/91)

**RULEMAKING STATEMENTS FOR PROPOSED KLAMATH FALLS PM₁₀ CONTROL STRATEGY
AS A REVISION TO THE STATE OF OREGON CLEAN AIR ACT IMPLEMENTATION PLAN**

STATEMENT OF NEED FOR RULEMAKING

Pursuant to ORS 183.335(7), this statement provides information on the intended action to amend a rule.

(1) Legal Authority

This proposal amends Oregon Administrative Rules (OAR) 340-20-047. It is proposed under authority of Oregon Revised Statutes (ORS) Chapter 468.

(2) Need for these Rules

The Klamath Falls area has a serious PM₁₀ air pollution problem. PM₁₀ refers to particulate matter ten micrometers or smaller in diameter. PM₁₀ particles are considered a risk to human health due to the body's inability to effectively filter out particles of this size.

The federal Clean Air Act requires that States develop and adopt State Implementation Plan (SIP) revisions to assure that areas which violate the PM₁₀ health and welfare standards are brought into attainment with those standards within prescribed time frames. The proposed control strategy document describes the State of Oregon plan to attain and maintain the annual and 24-hour PM₁₀ standards in the Klamath Falls PM₁₀ Nonattainment Area.

The principal means of achieving the necessary air quality improvements is through PM₁₀ emission reductions from woodstoves and fireplaces, open burning of debris, and road dust. Additional reductions are expected from statewide efforts to reduce slash burning smoke. Contingency plans to be implemented if the airshed fails to attain the air quality standards by December 31, 1991, include new industrial controls, removal of woodstoves upon sale of a home and further restrictions on agricultural and forestry burning.

(3) Principal Documents Relied Upon

The Clean Air Act Amendments of 1990, Title I. 42 U.S.C. 7401 et seq., as amended. November 15, 1990.

PM₁₀ SIP Development Guideline, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park NC, June 1987, EPA-450/2-86-001.

Previous staff reports to the Environmental Quality Commission (EQC):

Agenda Item D, January 22, 1988, EQC Meeting, Informational Report: New Federal Ambient Air Quality Standard for Particulate Matter (PM₁₀) and Its Effects on Oregon's Air Quality Program.

Agenda Item D, January 31, 1991, EQC Meeting, Revision of the State Implementation Plan (SIP) to include PM₁₀ Air Pollution Control Strategies for the Klamath Falls PM₁₀ Nonattainment Area.

Guidance Document for Residential Wood Combustion Emission Control Measures, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park NC, September 1989, EPA-450/2-89-015.

All documents referenced may be inspected at the Department of Environmental Quality, Air Quality Division, 811 S.W. 6th Avenue, Portland, Oregon, during normal business hours.

LAND USE CONSISTENCY STATEMENT

The proposed rule changes appear to affect land use as defined in the Department's coordination program with Department of Land Conservation and Development (DLCD), but appear to be consistent with the Statewide Planning Goals.

With regard to Goal 6, (air, water, and land resources quality), the proposed changes are designed to enhance and preserve air quality in the State and are considered consistent with the Goal. The proposed rule changes do not appear to conflict with the other Goals.

Public comment on any land use issue involved is welcome and may be submitted in the same fashion as indicated for other testimony on these rules.

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 DLCD to mediate any appropriate conflicts brought to our attention by local, state, or federal authorities.

JEC:a
RPT\AH14495
(8/14/91)

**FISCAL AND ECONOMIC IMPACT STATEMENT
FOR PROPOSED KLAMATH FALLS PM₁₀ CONTROL STRATEGY
AS A REVISION TO THE STATE IMPLEMENTATION PLAN**

PROPOSAL SUMMARY

The implementation of the PM₁₀ control strategy involves residents, industries, local governments, and State and federal agencies. The group most affected by the proposed PM₁₀ control strategy for the Klamath Falls area are residents with woodstoves or fireplaces. If the contingency plan is implemented, the owners/operators of wood products industries will also be affected. No adverse fiscal impact on small businesses (less than 50 employees) is anticipated. Heating system dealerships may benefit from the woodstove removal upon sale contingency element as well as the phaseout of woodburning curtailment exemptions required by the Klamath County Ordinance.

COSTS TO RESIDENTS WITH WOODSTOVES OR FIREPLACES

Woodstove and fireplace emissions will be reduced by a public education addressing firewood seasoning and woodstove operation, a local mandatory woodburning curtailment program, the Oregon woodstove certification program, financial assistance programs for low income households for replacement of existing woodstoves with cleaner burning units and weatherization of homes and a ban on installation of used, noncertified woodstoves.

The typical cost of woodburning curtailment is estimated at \$2-\$5 per curtailment day per woodburning home, depending primarily on the type of alternative heat, amount of weatherization, and size of home. According to the 1991 Klamath Falls wood heating survey, of the 13,600 households within the nonattainment area, 50% (6,800) burn wood. These homeowners would not be able to burn wood on the approximately 50 red days and 20 yellow days per year (two-year average, 1988-1990) when the mandatory curtailment program is in effect. Based on these estimates, the total homeowner cost associated with the mandatory curtailment program range between \$1 and \$2.4 million dollars per year.

Costs associated with the ban on the sale and installation of used noncertified woodstoves is discussed in the fiscal impact statement for proposed rule (OAR 340-34-010).

Costs associated with the contingency plan element requiring the removal of woodstoves from homes upon sale is discussed in the fiscal impact statement for the proposed rule (OAR 340-34-200).

The above costs are somewhat offset by Klamath County's PURE Project, providing assistance to low-income families for home weatherization and replacement of existing woodstoves with cleaner burning units. Approximately \$1.5 million has been secured thus far through Community Development Block Grants and Oil Overcharge Settlement Funds.

CONTINGENCY PLAN COSTS TO WOOD PRODUCTS INDUSTRY

If Klamath Falls fails to attain the air quality standards by the Clean Air Act deadline of December 31, 1994, some wood products industry emissions will be required under the contingency plan. The contingency plan for industrial emission control requirements within the Urban Growth Boundary will result in an estimated capital cost of about \$2.4 - \$3 million with related maintenance costs of roughly \$600,000 per year. If industries near the nonattainment area are found to have a significant PM₁₀ impact on the nonattainment area, they will also be required to install control systems at an estimated capital cost of \$8 million. Details are discussed in the proposed Industrial RACT\BACT Rule fiscal impact statement (OAR 340 - 21-005 to 250).

COSTS TO STATE AND LOCAL GOVERNMENT AGENCIES

The attainment plan includes a commitment from the State of Oregon Department of Transportation to reduce emissions from winter road sanding by 60% through the use of deicing materials, rapid cleanup of sanding aggregate and use of less sanding material. The cost associated with this program are estimated to range from \$30,000 to \$115,000 per year depending on winter weather conditions.

The fugitive dust contingency element requiring dust control from landfill sites, lots and quarries using a dust palliative is estimated at \$20,000 per year assuming 3 applications per year during the summer months on 20,000 sq. yards of land.

Costs to the Oregon Department of Forestry (ODOF) associated with operation of the voluntary forestry smoke management program are about \$ 23,000 per year for forecasting and program coordination services. Costs to the US Forest Service and private land owners to reschedule slash burning to days with favorable smoke dispersion capacity have been estimated by ODOF at \$23,000 per year.

The contingency plan industrial emission control provisions will require additional plan reviews, inspections, monitoring report reviews, and other compliance assurance activities by Department of Environmental Quality staff. This additional work will be integrated into the permit program and fee structure.

The compliance assurance surveys, exemption permitting and enforcement activities for the woodburning curtailment programs will be conducted by Klamath County staff. Klamath County has budgeted \$112,000 for the next year for a full-time air quality coordinator, two administrative assistants, two part-time enforcement inspectors and associated program costs. Local governments will shift existing resources as necessary to handle the workload associated with the air quality programs.

JEC
RPT\AH14493
(8/14/91)

NOTICE OF PUBLIC HEARING

Hearing Dates: September 26,
27, 30 & October
1, 1991
Comments Due: October 2, 1991

WHO IS AFFECTED:

Individuals, especially those with woodstoves, and board product industries statewide, local governments, agricultural operations and industries in or near the Medford-Ashland, Klamath Falls, Grants Pass and La Grande PM₁₀ Nonattainment Areas.

WHAT IS PROPOSED:

The Department of Environmental Quality is proposing to amend OAR 340-20-047, the State of Oregon Clean Air Act Implementation Plan to:

- o Revise fine particulate (PM₁₀) Pollution Control Strategies for the Medford, Grants Pass and Klamath Falls areas;
- o Add a new PM₁₀ Control Strategy for the La Grande area;
- o Add new regulations for woodstoves, OAR Chapter 340, Division 34;
- o Add new contingency industrial particulate emission standards for PM₁₀ nonattainment areas, OAR Chapter 340, Division 21;
- o Revise the Medford/Grants Pass Particulate Standard Rules, OAR Chapter 340, Division 30;
- o Revise Board Products Particulate Emission Standard Rules, OAR Chapter 340, Division 25;
- o Revise Ambient Air Standard Rules, OAR Chapter 340, Division 31;
- o Revise Rogue Basin Open Burning Control Area rules, OAR Chapter 340, Division 23.

WHAT ARE THE HIGHLIGHTS:

The federal Clean Air Act requires states to submit PM₁₀ attainment Control Strategies for PM₁₀ Nonattainment Areas to the U.S. Environmental Protection Agency (EPA) by November 15, 1991. The Control Strategies specify how federal PM₁₀ air quality standards will be attained by the Act's deadline of December 31, 1994. They primarily rely on controlling PM₁₀ emissions from residential woodheating, industry and open burning.

ATTACHMENT D

The proposed rules which would implement PM₁₀ Control Strategies will:

- o Regulate residential woodheating according to new legislative authority including:
 - > Banning the sale of used, uncertified woodstoves statewide;
 - > allowing DEQ to prohibit woodheating on poor air quality days if local governments fail to adopt or implement such programs where needed;
 - > Requiring the destruction of uncertified woodstoves upon the sale of a home as a contingency measure if an area fails to attain compliance with the PM₁₀ standard by December 31, 1994.
- o Require industries in PM₁₀ nonattainment areas to meet Reasonably Available and Best Available Control Technology requirements of the Clean Air Act as a contingency measure if areas fail to attain compliance with the PM₁₀ standard by the Clean Air Act deadline.
- o Require tighter meteorological criteria for allowing open burning in the Rogue Basin Open Burning Control Area, and ban open burning from November through February in this area as a contingency if it fails to attain compliance with the PM₁₀ standard by the Clean Air Act deadline.
- o Address housekeeping/enforceability issues raised by EPA with respect to existing state regulations covering the Board Products Industry, Medford/Grants Pass Industrial Particulate Emission and Ambient Air Standards.

HOW TO COMMENT:

Copies of the complete proposed rule packages may be obtained from the Air Quality Division at 811 S.W. Sixth Avenue, Portland, OR 97204, or the regional office nearest you. For further information, call toll free 1-800-452-4011 (in Oregon), or contact:

Merlyn Hough at (503) 229-6446 (Medford-Ashland)
John Core at (503) 229-5380 (Klamath Falls)
Howard Harris at (503) 229-6086 (Grants Pass)
Brian Finneran at (503) 229-6278 (La Grande)
Andy Ginsburg at (503) 229-5581 (Industry)
David Collier at (503) 229-5177 (Woodstoves)

Public hearings will be held before a hearings officer at:

7:00 pm
September 26, 1991
Commission Hearing Room
Courthouse Annex
Klamath Falls, Oregon

7:00 pm
September 30, 1991
Smullin Center Auditorium
Rogue Valley Medical Ctr.
Medford, Oregon

7:00 pm
September 27, 1991
City Council Chambers
101 NW "A" Street
Grants Pass, Oregon

7:00 pm
October 1, 1991
City Hall
1000 Adams Avenue
La Grande, Oregon

3:00 pm
October 1, 1991
DEQ Offices
811 SW Sixth Avenue
Portland, Oregon

Oral and written comments will be accepted at the public hearings. Written comments may be sent to the DEQ, but must be received no later than 5 pm, October 2, 1991.

WHAT IS THE NEXT STEP:

After public hearings, the Environmental Quality Commission may adopt rule amendments and Control Strategies identical to the proposed amendments, adopt modified rule amendments and Control Strategies on the same subject matter, or decline to act. The adopted rules and Control Strategies will be submitted to the EPA as part of the State Clean Air Act Implementation Plan. The Commission's deliberation should come on November 7, 1991, 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.

YM:a
RPT\AH15041
(8/14/91)

(2) in determining air purity standards, the commission shall consider the following factors:

(a) The quality or characteristics of air contaminants or the duration of their presence in the atmosphere which may cause air pollution in the particular area of the state;

(b) Existing physical conditions and topography;

(c) Prevailing wind directions and velocities;

(d) Temperatures and temperature inversion periods, humidity, and other atmospheric conditions;

(e) Possible chemical reactions between air contaminants or between such air contaminants and air gases, moisture or sunlight;

(f) The predominant character of development of the area of the state, such as residential, highly developed industrial area, commercial or other characteristics;

(g) Availability of air-cleaning devices;

(h) Economic feasibility of air-cleaning devices;

(i) Effect on normal human health of particular air contaminants;

(j) Effect on efficiency of industrial operation resulting from use of air-cleaning devices;

(k) Extent of danger to property in the area reasonably to be expected from any particular air contaminants;

(l) Interference with reasonable enjoyment of life by persons in the area which can reasonably be expected to be affected by the air contaminants;

(m) The volume of air contaminants emitted from a particular class of air contamination source;

(n) The economic and industrial development of the state and continuance of public enjoyment of the state's natural resources; and

(o) Other factors which the commission may find applicable.

(3) The commission may establish air quality standards including emission standards for the entire state or an area of the state. The standards shall set forth the maximum amount of air pollution permissible in various categories of air contaminants and may differentiate between different areas of the state, different air contaminants and different air contamination sources or classes thereof. [Formerly 449.785]

468.300 When liability for violation not applicable. The several liabilities which may be imposed pursuant to ORS 448.305, 454.010

to 454.040, 454.205 to 454.255, 454.405, 454.425, 454.505 to 454.535, 454.605 to 454.745 and this chapter upon persons violating the provisions of any rule, standard or order of the commission pertaining to air pollution shall not be so construed as to include any violation which was caused by an act of God, war, strife, riot or other condition as to which any negligence or wilful misconduct on the part of such person was not the proximate cause. [Formerly 449.825]

468.305 General comprehensive plan. Subject to policy direction by the commission, the department shall prepare and develop a general comprehensive plan for the control or abatement of existing air pollution and for the control or prevention of new air pollution in any area of the state in which air pollution is found already existing or in danger of existing. The plan shall recognize varying requirements for different areas of the state. [Formerly 449.782]

468.310 Permits. By rule the commission may require permits for air contamination sources classified by type of air contaminants, by type of air contamination source or by area of the state. The permits shall be issued as provided in ORS 468.065. [Formerly 449.727]

468.315 Activities prohibited without permit; limit on activities with permit. (1) Without first obtaining a permit pursuant to ORS 468.065, no person shall:

(a) Discharge, emit or allow to be discharged or emitted any air contaminant for which a permit is required under ORS 468.310 into the outdoor atmosphere from any air contamination source.

(b) Construct, install, establish, develop, modify, enlarge or operate any air contamination source for which a permit is required under ORS 468.310.

(2) No person shall increase in volume or strength discharges or emissions from any air contamination source for which a permit is required under ORS 468.310 in excess of the permissive discharges or emission specified under an existing permit. [Formerly 449.731]

468.320 Classification of air contamination sources; registration and reporting of sources. (1) By rule the commission may classify air contamination sources according to levels and types of emissions and other characteristics which cause or tend to cause or contribute to air pollution and may require registration or reporting or both for any such class or classes.

(2) Any person in control of an air contamination source of any class for which registration and reporting is required under subsection (1) of this section shall register

**Summary of Proposed PM₁₀ Control Strategy
Klamath Falls Nonattainment Area**

Who? When? Key: L= Local Government, S= State Agency
 E= Existing Strategy, N=New Strategy
 C= New Contingency Plan

Residential Woodburning Controls:

S	E	EPA\DEQ certification program for new woodstoves;
L	E	Wood burning public education program;
L	E	Voluntary cordwood seasoning program.
L	E	Year around, 20% woodstove plume opacity (stove startup and shutdown periods exempted);
L	E	Phase-out of curtailment exemptions: sole source nonowner occupied dwellings by 1993 and owner occupied, low income sole source by 1998. All sole source households (except tenant occupied and low income) must have secondary heat sources by 1996.
L	E	Home weatherization and woodstove replacement program for low income homeowners funded at \$1.44 million;
L	N	Mandatory curtailment to achieve 90% compliance;
L/S	N	Ban on the sale of used, noncertified woodstoves;
S	N	Backup authority from 1991 Legislature for DEQ to adopt mandatory curtailment programs in the event that local governments fail to adopt, implement or enforce local ordinances;
S	N	Backup authority from 1991 Legislation for statewide ban on the sale and installation of used, noncertified woodstoves;
L	C	Removal of noncertified woodstoves upon sale of the property;

- S C State backup authority from 1991 Legislature to require removal and destruction of noncertified woodstoves upon sale of home.
- L C Fuelwood seasoning requirement on all firewood sold within Klamath County;
- L C Expansion of the nonattainment area Keno-Midland area south to the California border;
- L C Prohibition on installation of more than one woodstove in a new dwelling;

Fugitive Dust Controls:

- S E Winter road sanding emissions reduced by 60% through use of deicing materials, use of less aggregate and rapid cleanup;
- S E Mandatory cleanup of trackout from unpaved areas onto state highway right-of-ways enforced through Oregon Department of Transportation Administrative Rules;
- L E Prohibition of off-road RV use on open fields and hillsides within the nonattainment area;
- L E Dust control on public and private landfill sites, abandoned construction sites and quarries as well as lots without ground cover;
- L E Requirements to cover haul trucks;
- L E Construction sites within the nonattainment area required to have asphalt trackout strips to reduce trackout;

Open Burning Controls:

- L N Year around prohibition on agricultural open burning within the nonattainment area and within one-quarter mile of the nonattainment area boundary;
- L N Prohibition on highway right-of-way burning within the County;
- L N Prohibition on residential open burning on wood burning curtailment days;

- L N Voluntary agricultural smoke management program on farm lands within Klamath County;
- S N Voluntary forestry smoke management program on forest lands within approximately 25 miles of the nonattainment area.
- L C Mandatory agricultural burning compliance with Klamath County burning advisories within Klamath County.
- L C Mandatory forestry burning compliance with Klamath County burning advisories within Klamath County.

Industrial Controls:

- S E Tightened emission offset requirements to manage emission growth for industrial significant emission rates from 15 down to 5 tons of PM₁₀ per year.
- S C Require installation of RACT/BACT industrial particulate emission controls within nonattainment area;
- S C Require installation of RACT/BACT industrial particulate emission controls near nonattainment areas if source emissions have a significant impact on the nonattainment area.

JEC:a
 RPT\AH14494
 (8/14/91)

REQUEST FOR EQC ACTION

Meeting Date: August 22, 1991
Agenda Item: C
Division: Air Quality
Section: Planning

SUBJECT:

Hearing Authorization: Revised PM₁₀ Control Strategy for the Grants Pass Nonattainment Area.

PURPOSE:

To meet new Clean Air Act requirements.

ACTION REQUESTED:

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

- Authorize Rulemaking Hearing
- Adopt Rules
 - Proposed Rules
 - Rulemaking Statements
 - Fiscal and Economic Impact Statement
 - Public Notice

- Attachment A
- Attachment B
- Attachment C
- Attachment D

- Issue a Contested Case Order
- Approve a Stipulated Order
- Enter an Order
 - Proposed Order

Attachment ___



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

Meeting Date: August 22, 1991
Agenda Item: C
Page 2

<input type="checkbox"/> Approve Department Recommendation	
<input type="checkbox"/> Variance Request	Attachment <input type="checkbox"/>
<input type="checkbox"/> Exception to Rule	Attachment <input type="checkbox"/>
<input type="checkbox"/> Informational Report	Attachment <input type="checkbox"/>
<input type="checkbox"/> Other: (specify)	Attachment <input type="checkbox"/>

DESCRIPTION OF REQUESTED ACTION:

An addendum to the control strategy for PM₁₀ (small particulate air pollution) is proposed for Grants Pass to ensure attainment of federal ambient air quality standards. This addendum to the control strategy must be submitted to the U.S. Environmental Protection Agency by November 15, 1991 under the new Clean Air Act requirements.

Air quality measurements taken in Grants Pass from 1985 to date indicate that the 24-hour, national PM₁₀ (particulate matter less than 10 μm in size) air quality health standard is exceeded about 1-10 days per year during the winter months. Maximum concentrations have been measured up to approximately 133% of the 24-hour air quality standard levels. The 1990 Clean Air Act (Act) requires states to revise PM₁₀ control strategies for nonattainment areas to assure attainment of the air quality health standards.

The revised strategy for Grants Pass includes specific Reasonably Available Control Measures (RACMs) and a contingency plan. The Department of Environmental Quality (DEQ, Department) is proposing to add the following new RACM elements to the control strategy: a) a ban on the sale, or installation of used, non-certified woodstoves, as provided by the 1991 Legislature; and b) a more restrictive ventilation index for open burning.

The proposed contingency plan, which would automatically go into effect if the area fails to attain the PM₁₀ standard by the Act deadline of Dec. 31, 1994, includes: a) State backup mandatory curtailment authority for residential woodburning if local government fails to adopt or implement this program; b) destruction of non-certified woodstoves upon home sale; c) new emission controls for certain sized industrial wood dust handling systems; and d) a ban on open burning within the Grants Pass Urban Growth Boundary during the heating season. The industrial contingency element would meet the Act's requirements for Reasonably and Best Available Control Technology (RACT/BACT) and is further explained under agenda item E for the August 22, 1991 EQC meeting. A complete listing of the control strategy is presented in Attachment F.

Meeting Date: August 22, 1991
Agenda Item: C
Page 3

The proposed control strategy has been designed to assure attainment of the air quality standards and meet the requirements of the Clean Air Act.

AUTHORITY/NEED FOR ACTION:

<input type="checkbox"/> Required by Statute: _____	Attachment _____
Enactment Date: _____	
<input checked="" type="checkbox"/> Statutory Authority: <u>ORS 468.305</u>	Attachment <u>E</u>
<input type="checkbox"/> Pursuant to Rule: _____	Attachment _____
<input checked="" type="checkbox"/> Pursuant to Federal Law/Rule: _____	Attachment _____

Federal Clean Air Act Amendments of 1990.

Other: _____ Attachment _____

Time Constraints:

The 1990 Clean Air Act requires states to:

- o Submit revised PM₁₀ control strategies (including contingency plans) by November 15, 1991;
- o Fully implement the attainment strategies by December 10, 1993;
- o Attain PM₁₀ standards by December 31, 1994; and
- o Implement contingency plan by July 1, 1995, if PM₁₀ standards are not met by December 31, 1994.

DEVELOPMENTAL BACKGROUND:

<input type="checkbox"/> Advisory Committee Report/Recommendation	Attachment _____
<input type="checkbox"/> Hearing Officer's Report/Recommendations	Attachment _____
<input type="checkbox"/> Response to Testimony/Comments	Attachment _____
<input checked="" type="checkbox"/> Prior EQC Agenda Items:	

Agenda Item E, September 8, 1989, EQC Meeting, Industrial PM₁₀ Rules for Medford-Ashland and Grants Pass: To Consider Adoption of New Industrial Rules That Were Taken to Public Hearings in January 1989.

Agenda Item E, November 2, 1990, EQC Meeting, Proposed Adoption of Rules for PM₁₀ Control Strategy for Grants Pass.

Supplemental Background Information:

Summary of Proposed PM₁₀ Control Strategy,
Grants Pass Urban Growth Boundary Attachment F

Meeting Date: August 22, 1991
Agenda Item: C
Page 4

The Commission adopted the original PM₁₀ control strategy for Grants Pass on November 2, 1990. The Department developed the proposed new reasonably available control measures and contingency plan elements in consideration of EPA guidance and consultation and the provisions of House Bill (HB) 2175. Local interested persons and groups were contacted, and their comments on the conceptual program outlined in Attachment F were considered.

Local government was not asked to develop the required mandatory curtailment contingency plan in light of the new State backup authority and the unlikely occurrence of the area needing such a program and local controversy about such a program.

REGULATED/AFFECTED COMMUNITY CONSTRAINTS/CONSIDERATIONS:

Implementation of the PM₁₀ air pollution control strategy involves residents, industries, local governments, state and federal agencies. Residents with woodstoves and fireplaces and owners/operators of wood products industries are the two groups most affected by the previous PM₁₀ attainment strategies (adopted in September 1989 and November 1990) and the proposed revisions to the strategy, including the contingency plan. In the event that a PM₁₀ control strategy for Grants Pass is not adopted as a revision to the State Implementation Plan, the Clean Air Act requires economic sanctions which include restricting federal highway funds, increased emission offset requirements for new or expanding industry, and ultimately a Federal Implementation Plan to be implemented by EPA.

Other considerations include the issue of smoke from forestry slash burning, which is of significant concern among the public. Although the current Oregon Department of Forestry (ODOF) Smoke Management Program (Plan) meets Clean Air Act requirements, revision to the Plan to strengthen protection of the nonattainment area from smoke impacts are being discussed with ODOF and will be included in the SIP in the near future.

Within the regulated community, the principal concern will likely be the proposed RACT\BACT industrial emission strategy and contingency plan. The Department is proposing adoption of rules that would establish BACT in the contingency plan instead of waiting until eighteen months after the contingency trigger as allowed under the Clean Air Act in order to give industry some certainty of requirements early in the process and to

avoid the establishment of two different standards within a short time-frame. Industry and environmental groups may not agree with the Department's determination of BACT and its interpretation of Clean Air Act requirements. The Department's proposal and alternatives are further explained in the documentation for the proposed industrial emission standard rules under agenda item E for the August 22, 1991 EQC meeting.

The economic impacts are outlined in Attachment C.

PROGRAM CONSIDERATIONS:

The proposed additional control measures may require additional staff resources. The industrial contingency plan element would require additional Department work in the areas of engineering plan reviews, inspections, monitoring reviews and other compliance assurance activities. This additional work could be integrated into existing permitting program activities and fee structure.

With respect to the mandatory woodburning curtailment contingency, the Department would first try to get local government to operate and enforce such a program if the contingency appeared to be in danger of being triggered. Failing that, some additional Department field staff would be needed to operate and enforce a mandatory woodburning curtailment program. In that event the Department would seek EPA funding.

A seasonal ban on open burning could impose additional staffing requirements upon local governments that are already cutting back on staff. Significant cuts in Josephine County's operating budget may jeopardize continued operation of the existing voluntary woodburning curtailment program.

ALTERNATIVES CONSIDERED BY THE DEPARTMENT:

1. Defer action to EPA. If a state fails to meet the Clean Air Act PM₁₀ requirements, EPA is required to impose sanctions and ultimately prepare a Federal Implementation Plan (FIP) to address the PM₁₀ problems.

Meeting Date: August 22, 1991
Agenda Item: C
Page 6

2. Rely only on woodstove changeouts upon home sales for contingency plan and not address other significant sources affecting air shed PM₁₀ violations. This alternative would be perceived by the community as inequitable and would weaken cooperative efforts of citizens needed to effectively implement the plan.

DEPARTMENT RECOMMENDATION FOR ACTION, WITH RATIONALE:

The Department recommends that the Commission authorize a public hearing on the proposed changes to the Grants Pass PM₁₀ control strategy as a revision to the State Implementation Plan in order to: 1) Implement the new legislative authority regarding residential woodburning programs, 2) provide a balanced strategy affecting all major sources, 3) insure attainment of PM₁₀ standards, and 4) fulfill new Clean Air Act requirements.

The Department requests authorization to hold public hearings to revise the SIP by adopting attachment A as an addendum to the PM₁₀ air pollution control strategy for the Grants Pass Nonattainment Area.

CONSISTENCY WITH STRATEGIC PLAN, AGENCY POLICY, LEGISLATIVE POLICY:

The proposed revision to the PM₁₀ control strategy for the Grants Pass area is consistent with Goals 2, 3, 4, and 5 of the Strategic Plan. The Department is not aware of any conflicts with agency or legislative policy. The proposed strategy and supporting rules are consistent with the Oregon Benchmarks goal of increasing the percentage of Oregonians living in areas which meet ambient air quality standards.

ISSUES FOR COMMISSION TO RESOLVE:

Does the EQC concur with the proposed manner of implementing the recent woodheating statutes and the overall balance of the contingency plans?

Meeting Date: August 22, 1991
Agenda Item: C
Page 7

INTENDED FOLLOWUP ACTIONS:

1. Hold a public hearing in Grants Pass in September 1991.
2. Summarize hearing testimony and respond to issues raised.
3. Propose adoption, with appropriate revisions in response to testimony, at the November 1991 EQC Meeting.

Approved:

Director:

Jul Hain

Division:

Shirley Greenwood

Section:

John Kurlantz

Report Prepared By: Howard Harris

Phone: 229-6086

Date Prepared: August 12, 1991

HWH:a
RPT\AH14499
(8/12/91)

State of Oregon
Department of Environmental Quality
Air Quality Division

State Implementation Plan Revision (Addendum)
for PM₁₀ in Grants Pass

A Plan for Attaining and Maintaining the
National Ambient Air Quality Standards
for PM₁₀

(Note: The original control strategy document, adopted by the Environmental Quality Commission on November 2, 1990, is available upon request at the Oregon Department of Environmental Quality/Air Quality Division, 811 SW 6th Avenue, Portland, OR 97204.)

August 1991

Table of Contents

Executive Summary (Revised)	3
4.13.6 State Implementation Plan Revision (Addendum) for Grants Pass PM ₁₀ Nonattainment Area	6
4.13.6.1 Purpose of the Addendum	6
Additional Control Measures	6
Contingency Plan	6
Resource Commitment	7
4.13.6.2 Ambient Air Quality Update	7
4.13.6.3 Additional Control Measures in Attainment Strategy	7
Ban on the Sale, or Installation of Noncertified Woodstoves	7
Revised Ventilation Index Criteria	8
Slash Burning Restrictions	8
4.13.6.4 Reasonably Available Control Measures (RACM/RACT) and Best Available Control Measures (BACM/BACT)	9
Available Fugitive Dust Controls	9
Available Residential Wood Combustion Control Measures	11
Prescribed Burning Control Measures	11
RACT Determinations For Stationary Sources	12
4.13.6.5 Contingency Plan Commitments	13
Backup Woodburning Curtailment Authority	13
Woodstove Removal Upon Home Sale	14
Industrial Controls (RACT/BACT)	14
Open Burning Ban During November through February	14
Emission Reductions From Contingency Measures	15
4.13.6.6 Resource Commitments	15
4.13.6.7 Additional Rules and Regulations	16
4.13.6.8 Emergency Action Plan	16
4.13.6.9 Lead Agency Designation	17
4.13.6.10 Plan Revision Provisions	17
4.13.6.11 Reasonable Further Progress Reporting	17
4.13.6.12 New Source Review	18
4.13.6.13 Public Involvement Update	18

Executive Summary (Revised)

The U.S. Environmental Protection Agency (EPA) adopted new particulate National Ambient Air Quality Standards (NAAQS) for PM₁₀ on July 1, 1987. PM₁₀ particulate is less than 10 micrometers in aerodynamic diameter or about one-tenth of the diameter of a human hair. The Clean Air Act requires that states develop and adopt State Implementation Plan (SIP) revisions to assure that areas which exceed the PM₁₀ standards are brought into attainment [~~within the time frames prescribed by the Clean Air Act (September 1991)~~] by December 31, 1994. This document describes the State of Oregon plan to attain the PM₁₀ standards in the Grants Pass nonattainment area (City of Grants Pass Urban Growth Boundary).

High exposure to particulate matter is of concern because of human health effects such as changes in lung functions and increased respiratory symptoms, aggravation of existing respiratory and cardiovascular disease, alternation in the body's defense system against foreign materials, damage to lung tissue, increased risk of cancer and, in extreme cases, premature death. Most sensitive to the effects of particulate matter are people with chronic obstructive pulmonary cardiovascular disease and those with influenza, asthmatics, the elderly, children and mouth-breathers.

Air quality measurements taken in Grants Pass from 1985 to date [~~have determined~~] indicate that the 24-hour PM₁₀ health NAAQS is exceeded about 1-10 days per year during the winter months. The annual average concentration of PM₁₀ does not exceed the annual average PM₁₀ NAAQS. The NAAQS adopted by the US Environmental Protection Agency were established to protect public health and welfare.

The 24-hour PM₁₀ NAAQS is 150 micrograms per cubic meter of air ($\mu\text{g}/\text{m}^3$). Excluding the pollution episode due to the Silver Complex wildfire, which occurred in September, 1987, the maximum concentration of PM₁₀ measured at the 11th and K Streets monitor in Grants Pass was 208 $\mu\text{g}/\text{m}^3$ on January 21, 1987. The 24-hour standard cannot be exceeded more than three times averaged over three calendar years. The annual average PM₁₀ concentration in Grants Pass is 42 $\mu\text{g}/\text{m}^3$ (four years of data) as compared to the average annual PM₁₀ NAAQS of 50 $\mu\text{g}/\text{m}^3$.

An inventory of PM₁₀ emissions developed for the Grants Pass Urban Growth Boundary (UGB) indicates that the major sources of particulate emissions during winter periods of worst-case 24-hour PM₁₀ concentrations are residential wood combustion (54%), industrial emissions (25%) and soil dust (13%). On an annual basis, these sources contribute 31%, 39%, and 17% respectively. Emission inventory information representative of worst-case 24-hour conditions have been qualitatively confirmed through receptor

modeling techniques which apportion source contributions on the basis of their chemical "fingerprints".

An air monitoring survey conducted in October 1985 showed that the PM₁₀ problem area in Grants Pass includes the central portion of the urban area (city limits and the urbanized area south of the Rogue River). Based on this survey, ambient air monitoring conducted at 11th & K Streets represents the highest PM₁₀ levels within the Urban Growth Boundary.

PM₁₀ design values are those 24-hour worst case and annual average concentrations from which reductions must be made to achieve the NAAQS. Analysis of all of the available PM₁₀ air quality data over the period of December, 1985 to November, 1989 indicates a 24-hour design value of 171 $\mu\text{g}/\text{m}^3$. and an annual average design value of 42 $\mu\text{g}/\text{m}^3$. For the control strategy analysis, these design values were compared to a 1986 base year emission inventory. Control strategies included in this plan have been designed to reduce current 24-hour concentrations of PM₁₀ by at least 22 $\mu\text{g}/\text{m}^3$. The strategy will also reduce the annual average PM₁₀ concentration.

The control strategies needed to assure attainment and maintenance of the PM₁₀ National Ambient Air Quality Standard focus on control of industrial emissions and residential wood combustion. Additional reductions are expected from local efforts to control open burning and statewide efforts to reduce slash burning smoke.

Although residential wood combustion (RWC) emissions are the predominant source contributing to the occasionally high winter 24-hour concentrations found in Grants Pass, industrial controls will contribute substantially (approximately 55%) to the necessary reduction to meet the 24-hour standard. A voluntary curtailment program on woodstove and fireplace use during pollution episodes, coupled with a public information effort and normal phase-in of certified stoves, will provide the balance of control needed to meet the PM₁₀ health standard. The Department estimates that 25% of the wood burning households will forego use of their woodstoves during the ~~[1-10]~~3-5 days of voluntary curtailment likely to occur each winter. These strategies will bring the area into attainment by the end of ~~[1992]~~1994 with an ample safety margin at the 11th & K critical monitoring site, which is near the City's industrial area. This safety margin will insure attainment at other non-monitored sites where the source impacts are more oriented toward residential wood combustion. In fact, the wood heating control strategy alone will be sufficient to achieve attainment in these areas.

With respect to slash burning, those emissions will be reduced in western Oregon by about 50% between 1978 and year 2000 as part of the Oregon Visibility Protection Plan. These emission

reductions will further insure that background PM₁₀ concentrations will not increase in future years.

The above outlined control strategy was adopted by the Environmental Quality Commission on November 2, 1990 and forwarded to EPA for review and approval. Although the adopted plan appeared to meet all EPA requirements, the Clean Air Act Amendments of 1990 (effective on November 15, 1990) imposed additional planning requirements, necessitating a revision of the Grants Pass PM₁₀ control strategy.

The amended Clean Air Act requires that PM₁₀ control strategies include a contingency plan that would automatically go into effect if the Grants Pass area does not meet PM₁₀ standards by December 31, 1994. The Grants Pass contingency plan consists of residential woodburning, industrial and open burning elements. The specific contingency plan elements that would go into effect, if the Grants Pass area fails to meet PM₁₀ standards by the Clean Air Act deadline, include:

1. Backup authority for DEQ to implement mandatory residential woodburning curtailment programs where necessary to meet PM₁₀ standards;
2. Requirement for noncertified woodstove removal upon home sale;
3. Industrial Reasonably Available Control Technology (RACT) and Best Available Control Technology (BACT) requirements; and
4. Open burning ban during November through February.

Implementation of the PM₁₀ control strategy will require the efforts of residents and industries within the Grants Pass UGB, Josephine County, the Oregon Department of Environmental Quality, the State Forestry Department, U.S. Forest Service and Bureau of Land Management.

Maintenance of ambient PM₁₀ concentrations below the NAAQS will rely on the same strategies. To demonstrate continued maintenance of the annual and 24-hour NAAQS for PM₁₀, annual and worst case day emissions were projected to the year 2000. For the worst case day, the emissions for each individual source category were forecast, taking into account expected growth and the application of the relevant control strategy element. Individual source impacts were then determined directly from the change in emissions between 1992 and 2000. The projection indicates a worst case day concentration in the year 2000 of 135 $\mu\text{g}/\text{m}^3$, which is significantly less than the 24-Hour standard of 150 $\mu\text{g}/\text{m}^3$. To check for continued maintenance of the annual standard, the total annual emissions for 1986 (the base year for which the annual design value was determined to be below the annual standard) and 2000 were compared. Annual emissions are expected to be approximately 18% lower in 2000 than in 1986. Thus, continued maintenance of the annual standard will be achieved.

4.13.6 State Implementation Plan Revision (Addendum) for Grants Pass PM₁₀ Nonattainment Area

4.13.6.1 Purpose of the Addendum

On November 2, 1990, the Environmental Quality Commission adopted a revision to the State Implementation Plan (SIP) Rule (OAR 340-20-047) to include the PM₁₀ control strategy for the Grants Pass nonattainment area (Urban Growth Boundary). The control strategy plan was subsequently forwarded to the Environmental Protection Agency (EPA) for its review and approval. Although the control plan appeared to meet all the requirements of the EPA at the time of adoption, the Clean Air Act Amendments of 1990, signed into law on November 15, 1990, imposed additional planning requirements which are outlined below.

The additional requirements include: 1) commitments for a contingency plan that would automatically go into effect if PM₁₀ standards are not achieved by the Clean Air Act deadline (December 31, 1994); 2) evaluation of the adopted control strategy against Reasonably Available Control Measures (RACM) and Best Available Control Measures (BACM); 3) Reasonably Available Control Technology (RACT) and Best Available Control Technology (BACT) applied to significant industrial sources; and 4) identification and commitment of resources to insure that the control strategy will be implemented and enforced.

These new requirements are addressed in this Addendum. Additional control measures, which primarily enhance the effectiveness of the previously adopted controls, are also incorporated into the revised strategy. Specifically, this Addendum includes an ambient air quality update and the following elements:

Additional Control Measures

1. A ban on used woodstove sale, or installation;
2. Revised ventilation index criteria for open burning (to 400 index);

Contingency Plan

1. State backup curtailment authority for residential woodburning;
2. Woodstove removal upon home sale;
3. Reasonably Available Control Technology/Best Available Control Technology (RACT/BACT) for industrial sources of PM₁₀;
4. A ban on open burning within the Grants Pass Urban Growth Boundary during November, December and January;

Resource Commitment

1. Local government staffing requirements and funding sources;
2. State staffing requirements and funding sources.

4.13.6.2 Ambient Air Quality Update

The maximum and second highest daily concentrations of PM₁₀ measured at the 11th & K monitoring site are displayed below for 1985 through 1990.

Table 4.13.6-1: PM₁₀ Highest and Second Highest Concentrations, 24-Hour Averages

<u>Year</u>	<u>11th & k</u>	
	<u>µg/m³</u>	
	<u>Max.</u>	<u>2nd High</u>
1985	200	183
1986	148	104
1987	268(208)*	230(128)*
1988	136	135
1989	151	132
1990	113	106

- * These measurements occurred in September 1987 during the Silver Creek wildfire. Such wildfires are considered to be exceptional events, and the resulting measurements are not used in developing air quality control strategy plans. The concentrations in parentheses were the next two highest levels of PM₁₀ outside the wildfire episode that were recorded during 1987.

4.13.6.3 Additional Control Measures in Attainment Strategy

The original control strategy focused on the primary sources of PM₁₀ in the Grants Pass air shed: residential woodburning and the wood products industry. Additional control measures, some of which specifically target open burning, have been developed since adoption of the original strategy in November 1990. Controls on open burning will serve to reinforce and strengthen the previously adopted control strategy by securing reductions from a highly visible source of PM₁₀ emissions. The additional control measures are described below.

Ban on the Sale, or Installation of Noncertified Woodstoves

The 1991 Legislature established by statute a ban on the sale of used, noncertified woodstoves. Also by statute, the State

Building Code Agency is required to prohibit the installation of used, noncertified woodstoves. These requirements become effective within 90 days of the date of the Governor's signature on the legislation.

Revised Ventilation Index Criteria

The ventilation index criteria for open burning within the Rogue Basin Open Burning Control Area has been revised in OAR 340-23-043 from a 200 index to the more restrictive 400 index. Based on 1983-1990 Medford Airport data (the source of the ventilation index forecasts for Grants Pass and Medford), this will increase the number of "no burn" days from 73 to 149 on an annual basis and from 54 to 83 on a November to February, seasonal basis.

Slash Burning Restrictions

PM₁₀ emissions from forestry slash burning, both because of the magnitude of the emissions and the proximity of the burning to the nonattainment area, can potentially have a significant impact on air quality within the Grants Pass area. Forestry burning is regulated under Oregon law (ORS 477.515) which requires that the State Forester and the Department of Environmental Quality jointly approve a plan to manage slash burning smoke in areas they designate.

By statute, the Oregon Department of Forestry (ODOF) is responsible for the administration of rules (OAR 629-43-043) and written procedures to assure the protection of air quality. Mandatory, daily burning instructions are issued by ODOF within the Smoke Management Plan's Restricted Area which covers western Oregon (crest of the Cascades west) and the Deschutes National Forest. The objective of the Plan is to prevent smoke resulting from burning on forest lands from being carried to or accumulating in designated areas. The Grants Pass area has been set aside as one of these designated areas. The provisions of this program exceed EPA's requirements for Reasonably Available Control Measures (RACM) for forestry smoke management programs.

Provisions included in the Oregon Visibility Protection Plan (OAR 340-20-047, Section 5.2) establish a goal of a 22% reduction in slash burning emissions (relative to 1982-84 levels) by the Year 2000. Emission information received from ODOF suggests that this goal has nearly been achieved. In addition, major reductions in slash burning emissions are expected to occur within the coming five years due to reductions in timber harvest levels on National Forest lands in Western Oregon. As a result, contributions from slash burning to PM₁₀ background air quality and direct impacts of smoke from forestry burning are expected to decline in the near future.

4.13.6.4 Reasonably Available Control Measures (RACM/RACT) and Best Available Control Measures (BACM/BACT)

The Clean Air Act requires that PM₁₀ control strategies include Reasonably Available Control Measures (RACM). EPA guidance lists control measures that are considered to be RACM and indicates that listed RACM measures must be included in the attainment plan if any of those measures are needed to demonstrate attainment. Otherwise, RACM is to be included in the contingency plan for all significant source categories contributing to PM₁₀ violations. Individual source categories may be excluded from meeting RACM requirements if any such sources do not contribute significantly to the PM₁₀ problem. Also, a specific RACM may be excluded if analysis indicates that the measure would be infeasible to implement. RACM for industrial point sources is referred to as Reasonably Available Control Technology (RACT).

For an area that fails to meet PM₁₀ standards by December 31, 1994, the Clean Air Act requires that the area be redesignated as a "serious" nonattainment area and that a revised PM₁₀ control strategy include additional control measures. EPA guidance indicates Best Available Control Measures (BACM) must be included for all significant source categories contributing to PM₁₀ violations. BACM for industrial point sources is referred to as Best Available Control Technology (BACT).

The individual RACM measures are listed below and analyzed for applicability to Grants Pass and/or feasibility of implementation.

Available Fugitive Dust Controls

The predominate sources of fugitive dust in the Grants Pass area are paved and unpaved roads. Both Josephine County and the City of Grants Pass have ongoing programs to reduce those emissions. Additionally, the State regulates such sources on a statewide basis in the restricted air sheds of the State. The original analysis of the problem indicated that a strategy focused on industry and woodburning would be sufficient to meet the PM₁₀ 24-hour standard, so no emission reduction credits were applied to projections of paved and unpaved road dust emissions.

EPA guidance requires that the following fugitive dust RACM elements be included in the PM₁₀ SIPs if the source is a significant contributor to PM₁₀ nonattainment and it is economically and technologically feasible to control:

- (1) Pave, vegetate or chemically stabilize access points where unpaved traffic surfaces adjoin paved roads;
- (2) Require dust control plans for construction or land clearing projects;
- (3) Require haul trucks to be covered;
- (4) Provide for traffic rerouting or rapid clean up of temporary (and not readily preventable) sources of dust on paved roads (water

erosion runoff, mud/dirt carryout areas, material spills, skid control sand). Delineate who is responsible for clean up;

(5) Prohibit permanent unpaved haul roads, and parking or staging areas at commercial, municipal, or industrial facilities; (6) Develop traffic reduction plans for unpaved roads using speed bumps, low speed limits, etc. to encourage use of other (paved) roads; (7) Limit use of recreational vehicles on open land (e.g., confine operations to specific areas, require use permits, outright ban); (8) Require improved material specification for and reduction of usage of skid control sand and salt (e.g., require use of coarse, nonfriable material during snow and ice season); (9) Require curbing and pave or stabilize (chemically or with vegetation) shoulders of paved roads; (10) Pave or chemically stabilize unpaved roads;

(11) Pave, vegetate, or chemically stabilize unpaved parking areas; (12) Require dust control measures for material storage piles; (13) Provide for storm water drainage to prevent water erosion onto paved roads; (14) Require revegetation, chemical stabilization, or other abatement of wind erodible soil, including lands subjected to water mining, abandoned farms, and abandoned construction sites; and (15) Rely upon the soil conservation requirements (e.g., conservation plans, conservation reserve) of the Food Security Act to reduce emissions from agricultural operations.

Fugitive dust control measures that have already been adopted by rule are found in Chapter 340, Division 21, Department of Environmental Quality. These rules apply within incorporated cities of 4,000 or more population and are enforced under OAR 340-21-060. These rules implement the following fugitive dust RACM measures:

<u>RACM Element</u>	<u>OAR 340 Division 21 Section:</u>
1	(2) (a)
2,10,11	(2) (b)
3	(2) (f)
4	(2) (g)
12	(2) (c)

In addition, the City of Grants Pass has implemented a program to pave all unpaved roads under its jurisdiction. This program began in 1988 and is expected to be completed by the end of 1991. The City also plans to go to washed, fractured rock for its sanding material after the existing supply has been used. Josephine County has all but 3 miles of its roads with bituminous, or better surfaces.

Available Residential Wood Combustion Control Measures

EPA lists four types of RACM for wood combustion. Each measure is listed below with a brief summary of how the measure is incorporated into the control plan for Grants Pass.

1. **Establish an episode curtailment program, including: a curtailment plan; a communication strategy to implement the plan; a surveillance plan (e.g., "windshield" survey, opacity trigger); and enforcement provisions including procedures, penalties, and exemptions). A voluntary program will be deemed reasonable if the area demonstrates attainment.**

A voluntary woodburning curtailment program, conforming to EPA guidance, has been adopted as a control strategy element (refer to Section 4.13.4.1). The contingency plan provides for a mandatory curtailment program to secure required additional emission reductions.

2. **Establish a public information program to inform and educate citizens about stove sizing, installation, proper operation and maintenance, general health risks of woodsmoke, new technology stoves, and alternatives to woodheating.**

A comprehensive public information program has been included as part of the control strategy for Grants Pass (refer to Section 4.13.4.1).

3. **Encourage improved performance of woodburning devices.**

The voluntary woodburning curtailment program contains a tracking element which involves follow-up contacts with identified problem woodburners.

4. **Provide inducements that would lead to reductions in the stove and fireplace population (or use).**

This Addendum includes a ban on the sale, or installation of used, noncertified woodstoves (refer to Section 4.13.6.3).

Prescribed Burning Control Measures

Prescribed burning and open burning are predominately background sources of PM₁₀ in the Grants Pass nonattainment area. Local fire authorities indicated that little, or no, residential open burning occurred during the December to January period, when peak PM₁₀ concentrations are usually measured. The peak day emission inventory for the UGB showed that Solid Waste Disposal and Fires, in combination, contributed only 0.3% to the Worst Case Day emissions. Even on an annual basis, such sources within the nonattainment area were estimated to contribute just 0.8% of the total annual emissions. The year-round ban on residential open

burning in Grants Pass primarily bolsters the adopted control strategy by eliminating a highly visible source of PM₁₀ emissions.

To reduce the level of PM₁₀ background concentrations in the Grants Pass air shed and other nonattainment areas, the main emphasis has been to develop and implement a slash burning control program, widely applicable to the forested areas of southern Oregon. EPA guidance requires that RACM measures from prescribed (slash) burning be included where it is shown that prescribed burning is or does contribute significantly to PM₁₀ exceedances within the nonattainment area. The guidance specifies that such a program must include: (1) smoke dispersion forecasts based (at minimum) on National Weather Service data; (2) a process for preparation and approval of burn plans; (3) availability of training programs for burners; (4) a public information program; (5) provisions for surveillance and enforcement of any mandatory requirements; (6) development of emission inventories; and (7) State oversight of the smoke management programs.

Oregon's forestry smoke management program, administered by the Oregon Department of Forestry (ODOF), exceeds all of the above RACM requirements for the nonattainment areas within Western Oregon. Smoke dispersion forecasts are issued daily by ODOF's smoke management center which are based on NWS and local weather data. The program requires the preparation and approval of burn plans prior to ignition. Training is provided each year by ODOF staff to all burners. For Federal employees, this training is supplemented by training programs offered by the US Forest Service, the Bureau of Land Management and the National Park Service. ODOF and the Federal agencies all offer information on their programs to the public. Air monitoring surveillance is provided through the Department's programs and through aircraft plume tracking provided by those conducting the burning. The program is enforced by ODOF Forest Practices foresters located in offices throughout the State. Emission inventories are developed in cooperation with ODOF using state of the art fuel consumption models. The Department oversees ODOF's program through periodic reviews and through ORS 477.515 which requires that the Director of the Department approve the program.

RACT Determinations for Stationary Sources

The determination of what constitutes Reasonably Available Control Technology requires case-by-case analysis with respect to technological feasibility and economic feasibility. The adopted industrial rules for the Medford-Ashland AQMA and the Grants Pass Nonattainment area are considered to meet EPA's RACT guidance with respect to hog fuel boilers and veneer dryers. Since control of these sources appeared to be sufficient for meeting the 24-hour PM₁₀ standard in Grants Pass, no additions to the primary control strategy adopted in November, 1990, have been proposed. However, the contingency plan provides for additional controls on air conveying systems, which will fulfill the RACT requirements. The

technological and economic feasibility of the additional air conveying system controls are summarized in the industrial rule documentation.

4.13.6.5 Contingency Plan Commitments

The Clean Air Act requires that the State Implementation Plan include contingency measures for significant sources of PM₁₀. These measures are to take effect without any further action by the state if the area fails to attain the PM₁₀ standard by the attainment date required in the Act. Accordingly, the following measures are included as contingency measures which will take effect only upon publication by EPA in the Federal Register that the area has failed to attain the PM₁₀ air quality standard by the required attainment date. Depending upon the effectiveness of the control strategies, EPA could make this determination in 1994, or subsequent years.

Backup Woodburning Curtailment Authority

EPA has determined that both a voluntary and an enforceable (mandatory) woodburning curtailment program represent RACM. Even though an enforceable program is not needed to demonstrate attainment in Grants Pass, it must be incorporated into the contingency plan because it is listed as a RACM that would be feasible to implement. The Department's backup curtailment authority will meet this requirement. However, if it becomes apparent that attainment will not be reached by the deadline, local government will be urged to adopt a local (enforceable) program in lieu of the State program. The curtailment program would apply to woodstoves, fireplaces and other woodheating devices. The State, or locally enforced, curtailment program must include at a minimum:

- ◆ A provision for a two stage curtailment program based on the severity of the projected air quality conditions;
- ◆ A provision to exempt all Oregon certified woodstoves from the first stage of curtailment;
- ◆ A provision for low income exemptions;
- ◆ A provisional exemption for sole source woodburning households;
- ◆ An exemption for pelletstoves;
- ◆ A provision for the Department to defer the operation and enforcement of the curtailment program at such time as the local government or regional authority has adopted and is adequately implementing the required curtailment program.

Woodstove Removal Upon Home Sale

The 1991 Oregon Legislature authorized by statute the removal of noncertified woodstoves upon home sale for any area that fails to meet the PM₁₀ standard(s) attainment deadline (December 31, 1984). After December 31, 1994 all noncertified woodstoves, except antiques and cookstoves, would be required to be removed and destroyed upon sale of a home in any PM₁₀ nonattainment area. The Department views this program as a primary contingency measure for the overall PM₁₀ control strategies required by EPA.

The requirements of the statute are immediately enforceable through civil penalties by amending OAR Chapter 340, Division 12. Between now and December 1994, the Department will also develop an advisory committee comprised of representatives from Oregon Title Companies, the Oregon Association of Realtors and the State Real Estate Agency in Salem. The goal of the advisory group will be to outline the most efficient means to disseminate information about the sale requirements to all home sellers in the nonattainment areas and to ensure that the stove removal and destruction requirement is carried out.

The Department would propose to the advisory group that current real estate documentation protocol be revised, with the desire to add stove tracking requirements to the State Real Estate Division's administrative rules. This cooperative relationship between the Department and Oregon's realty professionals will help ensure awareness of the law, disclosure of un-certified used stoves and compliance with the stove removal and destruction requirement.

Industrial Controls (RACT/BACT)

Larger air conveying systems, principally wood dust handling systems, operating in the Grants Pass nonattainment area would be subject to reduced emission rates (OAR 340-21-005 through OAR 340-21-250). Air conveying systems emitting greater than 3 tons per year of particulate matter would be required to meet an emission standard of 0.005 grains per standard cubic foot. This would necessitate, in most cases, bag filter systems. The tightened emission standard and its application would meet Clean Air Act RACT/BACT requirements.

Open Burning Ban During November through February

By administrative rule (OAR 340-23-090), if either the Medford-Ashland AQMA, or the Grants Pass PM₁₀ nonattainment area fails to meet the PM₁₀ standard(s) by December 31, 1994, then all open burning would be banned in the Rogue Basin Open Burning Control Area during November, December, January and February.

Emission Reductions From Contingency Measures

Woodstove emissions would be reduced an additional 34 tons per year by the year 2000 through the contingency plan. Industrial emissions would be reduced an additional 12 tons per year through installation of RACT\BACT contingency emission controls. Additional reductions which cannot be quantified by the emission inventory would be achieved through seasonal open burning restrictions.

4.13.6.6 Resource Commitments

Residential woodburning programs are being implemented by local and State governments. During the 1990 through 1991 heating season the Department (DEQ) provided assistance to the Josephine County Environmental Health Department toward the operation of the Grants Pass voluntary woodburning curtailment program. The DEQ provided resources which included a telephone announcement machine, operational expenses and a computer, for a total of \$2,970.

For the 1991 through 1992 heating season, the DEQ plans to increase the level of assistance to Josephine County and provide \$12,700 toward the implementation and operation of the voluntary woodburning curtailment program. This assistance will allow for an expanded effort in the areas of air quality monitoring, public information announcements and tracking and follow-up reporting.

No additional funds have been earmarked beyond the 1991-1992 heating season. For future operation of the local woodburning curtailment program, the Department will seek federal funding and will try to secure a permanent funding base through the State Legislature in the 1993 session.

The DEQ operates the air monitoring network used by Josephine County for the daily woodburning advisory, provides public information assistance and administers the woodstove certification program. These services are part of the statewide DEQ base program identified in the State/EPA Agreement (SEA).

Industrial compliance assurance programs are implemented by the DEQ as part of the statewide base program; resources are identified in the SEA. Open burning control programs are implemented by local fire departments and the DEQ as part of base programs.

Forestry slash burning programs are administered by the Oregon Department of Forestry as part of base programs.

4.13.6.7 Additional Rules and Regulations

The following rules and regulations are in addition to those adopted in November 1990 by the Environmental Quality Commission (refer to Section 4.13.4.2 of the Oregon State Implementation Plan). The statutory ban on the installation of used, noncertified woodstoves is to be codified into State rules by the Building Codes Agency.

Oregon Administrative Rules

Subject

340-34-010	Ban on sale of used, noncertified woodstoves
340-34-150	Backup authority for operation of a mandatory woodburning curtailment program (contingency)
340-34-200	Removal of woodstove upon home sale (contingency)
340-23-043 (revised)	Revised Ventilation Index Criteria
629-43-043	Slash Burning Restrictions
340-20-047	Oregon Visibility Protection
340-21-005 to 250	Industrial Contingencies
340-23-090	Seasonal Ban on Open Burning

4.13.6.8 Emergency Action Plan

Authority for the Department to regulate air pollution sources, including woodstoves, during emergency episodes is provided under ORS 468. OAR 340 Division 27 describes Oregon's Emergency Action Plan. The rule is intended to prevent excessive accumulation of air contaminants during periods of air stagnation which, if unchecked, could cause significant harm to the public health. The rule establishes criteria for identifying and declaring air pollution episodes below the significant harm level and was adopted pursuant to requirements of the Clean Air Act. The action levels in the Plan were established by the EPA and subsequently adopted by the Department.

The statutory authority for emergency episodes and the new woodstove rules (OAR 340-34-150 through -175) allow the Department to regulate woodstoves under emergency episode conditions. When

there is an imminent and substantial endangerment to public health, ORS 468.115 authorizes the Department, at the direction of the Governor, to enforce orders requiring any person to cease and desist actions causing the pollution. State and local police are directed to cooperate in the enforcement of such orders.

4.13.6.9 Lead Agency Designation

Governor Barbara Roberts has designated the Department of Environmental Quality as the lead agency to implement, maintain and enforce the requirements of the Clean Air Act in regards to PM₁₀ pollution.

4.13.6.10 Plan Revision Provisions

In the event that the Grants Pass area fails to meet Reasonable Further Progress milestones, or the applicable PM₁₀ attainment deadline, then the Department, as the designated lead agency, will first notify in writing the affected local governments and industrial organizations. Within 30 days of notification, the Department will complete a written analysis of control strategy commitments, evaluating the adequacy of implementation. Any deficiencies in implementation will be corrected through rulemaking, if necessary, within six months of the original deficiency notification. The six month time frame will accommodate the State's normal rulemaking process. Additionally, affected parties will be notified of the requirement to expeditiously implement the contingency measures, if necessary. As the lead agency, the Department will submit a plan revision that meets all relevant Clean Air Act and EPA requirements within 18 months of a notification from EPA that the area has failed to meet the attainment deadline and has been reclassified to "Serious."

4.13.6.11 Reasonable Further Progress Reporting

Part D of Title I of the Clean Air Act Amendments of 1990 (Section 171) requires that State Implementation Plans for PM₁₀ make Reasonable Further Progress (RFP) toward attainment of the National Ambient Air Quality Standards (NAAQS). The Act further specifies that RFP means those annual incremental reductions of PM₁₀ emissions necessary to attain the NAAQS by the attainment date. The Department believes that the scheduled implementation of the provisions of the Grants Pass PM₁₀ SIP and attainment of the NAAQS within the Grants Pass nonattainment area fulfills the RFP requirement of the Act.

4.13.6.12 New Source Review

The New Source Review rules (OAR 340-20-220 to -276) and Air Contaminant Discharge Permit rules (OAR 340-20-140 to -185) identify the procedures for reviewing and permitting new sources. The significant emission rate for PM₁₀ emissions in the Grants Pass Nonattainment Area is twenty five tons per year (OAR 340-20-225). The New Source Review rule (OAR 340-20-240) identifies requirements for sources in nonattainment areas, including applying the lowest achievable emission rate (LAER) and a 1:1 offset ratio required in the Grants Pass nonattainment area.

4.13.6.13 Public Involvement Update

Public hearings were held on the Grants Pass PM₁₀ SIP in Grants Pass on August 2 and September 13, 1990. Notices were published in the Secretary of State Bulletin on July 1, 1990, in the local newspaper on August 11, 1990. The State Clearinghouse initiated the intergovernmental review process on August 6, 1990. The Grants Pass PM₁₀ SIP was adopted by the Environmental Quality Commission on November 2, 1990.

A public hearing is scheduled on this addendum in Grants Pass on September 27, 1991. The public hearing notice will be published in the Secretary of State Bulletin on September 1, 1991, and in the local newspaper 30 days prior to the hearing. The public hearing notice will also be distributed for local and State agency review through the A-95 State Clearinghouse 45 days prior to adoption by the Environmental Quality Commission.

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HWH:a
RPT\AH15004
(8/14/91)

**RULEMAKING STATEMENTS FOR PROPOSED GRANTS PASS
PM₁₀ CONTROL STRATEGY AS A REVISION TO THE
STATE OF OREGON CLEAN AIR ACT IMPLEMENTATION PLAN**

STATEMENT OF NEED FOR RULEMAKING

Pursuant to ORS 183.335(7), this statement provides information on the intended action to amend a rule.

(1) Legal Authority

This proposal amends Oregon Administrative Rules (OAR) 340-20-047. It is proposed under authority of Oregon Revised Statutes (ORS) Chapter 468.

(2) Need for these Rules

The Grants Pass area (City Urban Growth Boundary) violates federal and state PM₁₀ health standards. PM₁₀ refers to particulate matter ten micrometers or smaller in diameter. PM₁₀ particles are considered a risk to human health due to the body's inability to effectively filter out particles of this size.

The Federal Clean Air Act requires that states develop and adopt State Implementation Plan (SIP) revisions to assure that areas which violate the PM₁₀ standards are brought into attainment with those standards within prescribed time frames. A contingency plan is also required to be developed and automatically implemented if the area fails to meet the deadline. The proposed control strategy document describes the State of Oregon plan to attain and maintain the annual and 24-hour PM₁₀ standards within the Grants Pass Urban Growth Boundary (UGB).

The principal means of achieving the necessary air quality improvements is through PM₁₀ emission reductions from woodstoves and fireplaces, the wood products industries, open burning of debris, slash burning and road dust.

(3) Principal Documents Relied Upon

The Clean Air Act Amendments of 1990, Title I. 42 U.S.C. 7401 et seq., as amended. November 15, 1990.

PM₁₀ SIP Development Guideline, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park NC, June 1987, EPA-450/2-86-001.

Guidance Document for Residential Wood Combustion Emission Control Measures, U.S. Environmental Protection Agency, Office of Air Quality

Planning and Standards, Research Triangle Park NC, September 1989, EPA-450/2-89-015.

PM₁₀ Guidance: Final Staff Work Product, U.S. Environmental Protection Agency, April 2, 1991.

Agenda Item E, November 2, 1990, EQC Meeting, Proposed Adoption of Rules for PM₁₀ Control Strategy for Grants Pass.

All documents referenced may be inspected at the Department of Environmental Quality, Air Quality Division, 811 S.W. 6th Avenue, Portland, Oregon, during normal business hours.

LAND USE CONSISTENCY STATEMENT

The proposed rule changes appear to affect land use as defined in the Department's coordination program with Department of Land Conservation and Development (DLCD), but appear to be consistent with the Statewide Planning Goals.

With regard to Goal 6, (air, water, and land resources quality), the proposed changes are designed to enhance and preserve air quality in the State and are considered consistent with the Goal. The proposed rule changes do not appear to conflict with the other Goals.

Public comment on any land use issue involved is welcome and may be submitted in the same fashion as indicated for other testimony on these rules.

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 DLCD to mediate any appropriate conflicts brought to our attention by local, state, or federal authorities.

HWH:a
RPT\AH15019
(8/14/91)

**FISCAL AND ECONOMIC IMPACT STATEMENT
FOR PROPOSED GRANTS PASS PM₁₀ CONTROL STRATEGY
AS A REVISION TO THE STATE IMPLEMENTATION PLAN**

PROPOSAL SUMMARY

The implementation of the PM₁₀ control strategy involves residents, industries, local governments, and state and federal agencies. The two groups most affected by the proposed PM₁₀ control strategy for the Grants Pass area are the owners/operators of wood products industries and residents with woodstoves or fireplaces.

No adverse impact on small businesses (less than 50 employees) is anticipated. Heating system dealerships may benefit from the woodstove-removal-upon-sale contingency element.

COSTS TO WOOD PRODUCTS INDUSTRIES

The contingency plan would require additional controls on certain sized air conveying systems (more than 3 tons/year), principally wood dust handling systems. This would involve adding bag filter systems, or equivalent emission control to an estimated five existing cyclones. Additional control of fugitive emissions would also be required. The approximate costs of these additional controls are estimated to be:

Capital Cost	\$450,000
Annual Operation & Maintenance	\$100,000.

No small businesses (less than 50 employees) would be affected by the industrial contingencies. Details are discussed in the proposed Industrial RACT/BACT Rule, fiscal impact statement (OAR 340-21-005 to 250).

COSTS TO RESIDENTS WITH WOODSTOVES OR FIREPLACES

As an additional control plan element, the Grants Pass PM₁₀ control strategy includes a provision, authorized by State legislation, to ban the sale, or installation of used, non-certified woodstoves. The associated costs of this plan element are discussed in the proposed Residential Woodheating Rule Amendments, fiscal impact statement (OAR 340-34-010).

Although a key control strategy element continues to be an area wide local voluntary woodburning curtailment program, the contingency plan includes a mandatory curtailment program which would entail a greater number of households curtailing woodburning than under the voluntary program. The typical cost of woodburning curtailment is estimated at \$2-5 per curtailment day per

woodburning home, depending primarily on the type of alternative heat, amount of weatherization and size of home. Approximately 4,200 homes in the critical PM₁₀ control area would be affected on the 3-5 days of red calls and 13 days of yellow calls during the heating season. The expected compliance rate for a mandatory program is estimated at 70%, based on experience in other areas. Using these estimates, the total homeowner cost associated with this contingency would range between \$105,000 and \$265,000 per year.

Costs associated with the contingency plan element requiring the removal and destruction of non-certified woodstoves upon home sale are discussed in the fiscal impact statement for the proposed rule (OAR 340-34-200).

COSTS OF REVISED VENTILATION INDEX CRITERIA

As an additional control strategy element, the revised Grants Pass PM₁₀ plan incorporates a revision of the existing ventilation index of 200 to a more restrictive level of 400 for open burning in the Rogue Basin. This would only affect persons or areas outside the City Limits of Grants Pass, where open burning is banned year-round. This would increase the number of "no burn" days from 73 to 149 on an annual basis. The associated costs of this plan element are provided in the proposed Amendments for the Rogue Basin Open Burning Control Area, fiscal impact statement.

COSTS OF A SEASONAL BAN ON OPEN BURNING

The contingency plan includes a four-month (November through February) ban on open burning in the Rogue Basin Open Burning Control Area. This would be a new restriction for those residences outside the City Limits of Grants Pass, where a year-round ban on open burning is in effect. For most affected residences, the seasonal ban on open burning would be a matter of shifting the time of burning, with no material financial costs imposed. The associated costs of this plan element are provided in the proposed Amendments for the Rogue Basin Open Burning Control Area (OAR 340-23-090), fiscal impact statement.

COSTS TO STATE AND LOCAL GOVERNMENT AGENCIES

The new industrial emission controls on air conveying systems in the contingency plan would require additional plan reviews, inspections, monitoring report reviews and other compliance assurance activities by Department of Environmental Quality staff. This additional work could be handled within existing resources.

The State would first look to local government to implement a mandatory woodburning curtailment program, if this contingency appeared imminent. The annual cost to local government of such a program would probably be in the range of \$12,000 to \$15,000. If a mandatory woodburning curtailment program were implemented by

the State under the backup legislative authority, additional staff resources would be needed, and the Department would seek EPA funding.

The ban on the sale, or installation of used, non-certified woodstoves would not have a fiscal impact on local government, since this would be State-enforced. The required surveillance and enforcement would be accomplished within the existing resources of the Department.

The contingency plan element requiring the removal and destruction of used, non-certified woodstoves would have negligible impact on local government. Existing resources in the Department's woodheating program would probably be adequate to carry out the necessary enforcement. EPA funding would be sought if there were additional staffing needs.

Costs to the Oregon Department of Forestry (ODOF) associated with operation of the voluntary forestry smoke management program are about \$ 23,000 per year for forecasting and program coordination services. Costs to the US Forest Service and private land owners to reschedule slash burning to days with favorable smoke dispersion capacity have been estimated by ODOF at \$23,000 per year.

HWH:a
RPT\AH15020
(8/14/91)

NOTICE OF PUBLIC HEARING

Hearing Dates: September 26,
27, 30 & October
1, 1991
Comments Due: October 2, 1991

WHO IS AFFECTED:

Individuals, especially those with woodstoves, and board product industries statewide, local governments, agricultural operations and industries in or near the Medford-Ashland, Klamath Falls, Grants Pass and La Grande PM₁₀ Nonattainment Areas.

WHAT IS PROPOSED:

The Department of Environmental Quality is proposing to amend OAR 340-20-047, the State of Oregon Clean Air Act Implementation Plan to:

- o Revise fine particulate (PM₁₀) Pollution Control Strategies for the Medford, Grants Pass and Klamath Falls areas;
- o Add a new PM₁₀ Control Strategy for the La Grande area;
- o Add new regulations for woodstoves, OAR Chapter 340, Division 34;
- o Add new contingency industrial particulate emission standards for PM₁₀ nonattainment areas, OAR Chapter 340, Division 21;
- o Revise the Medford/Grants Pass Particulate Standard Rules, OAR Chapter 340, Division 30;
- o Revise Board Products Particulate Emission Standard Rules, OAR Chapter 340, Division 25;
- o Revise Ambient Air Standard Rules, OAR Chapter 340, Division 31;
- o Revise Rogue Basin Open Burning Control Area rules, OAR Chapter 340, Division 23.

WHAT ARE THE HIGHLIGHTS:

The federal Clean Air Act requires states to submit PM₁₀ attainment Control Strategies for PM₁₀ Nonattainment Areas to the U.S. Environmental Protection Agency (EPA) by November 15, 1991. The Control Strategies specify how federal PM₁₀ air quality standards will be attained by the Act's deadline of December 31, 1994. They primarily rely on controlling PM₁₀ emissions from residential woodheating, industry and open burning.

ATTACHMENT D

The proposed rules which would implement PM₁₀ Control Strategies will:

- o Regulate residential woodheating according to new legislative authority including:
 - > Banning the sale of used, uncertified woodstoves statewide;
 - > allowing DEQ to prohibit woodheating on poor air quality days if local governments fail to adopt or implement such programs where needed;
 - > Requiring the destruction of uncertified woodstoves upon the sale of a home as a contingency measure if an area fails to attain compliance with the PM₁₀ standard by December 31, 1994.
- o Require industries in PM₁₀ nonattainment areas to meet Reasonably Available and Best Available Control Technology requirements of the Clean Air Act as a contingency measure if areas fail to attain compliance with the PM₁₀ standard by the Clean Air Act deadline.
- o Require tighter meteorological criteria for allowing open burning in the Rogue Basin Open Burning Control Area, and ban open burning from November through February in this area as a contingency if it fails to attain compliance with the PM₁₀ standard by the Clean Air Act deadline.
- o Address housekeeping/enforceability issues raised by EPA with respect to existing state regulations covering the Board Products Industry, Medford/Grants Pass Industrial Particulate Emission and Ambient Air Standards.

HOW TO COMMENT:

Copies of the complete proposed rule packages may be obtained from the Air Quality Division at 811 S.W. Sixth Avenue, Portland, OR 97204, or the regional office nearest you. For further information, call toll free 1-800-452-4011 (in Oregon), or contact:

Merlyn Hough at (503) 229-6446 (Medford-Ashland)
John Core at (503) 229-5380 (Klamath Falls)
Howard Harris at (503) 229-6086 (Grants Pass)
Brian Finneran at (503) 229-6278 (La Grande)
Andy Ginsburg at (503) 229-5581 (Industry)
David Collier at (503) 229-5177 (Woodstoves)

Public hearings will be held before a hearings officer at:

7:00 pm
September 26, 1991
Commission Hearing Room
Courthouse Annex
Klamath Falls, Oregon

7:00 pm
September 30, 1991
Smullin Center Auditorium
Rogue Valley Medical Ctr.
Medford, Oregon

7:00 pm
September 27, 1991
City Council Chambers
101 NW "A" Street
Grants Pass, Oregon

7:00 pm
October 1, 1991
City Hall
1000 Adams Avenue
La Grande, Oregon

3:00 pm
October 1, 1991
DEQ Offices
811 SW Sixth Avenue
Portland, Oregon

Oral and written comments will be accepted at the public hearings. Written comments may be sent to the DEQ, but must be received no later than 5 pm, October 2, 1991.

WHAT IS THE NEXT STEP:

After public hearings, the Environmental Quality Commission may adopt rule amendments and Control Strategies identical to the proposed amendments, adopt modified rule amendments and Control Strategies on the same subject matter, or decline to act. The adopted rules and Control Strategies will be submitted to the EPA as part of the State Clean Air Act Implementation Plan. The Commission's deliberation should come on November 7, 1991, 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.

YM:a
RPT\AH15041
(8/14/91)

168.300

PUBLIC HEALTH AND SAFETY

(2) in determining air purity standards, the commission shall consider the following factors:

(a) The quality or characteristics of air contaminants or the duration of their presence in the atmosphere which may cause air pollution in the particular area of the state;

(b) Existing physical conditions and topography;

(c) Prevailing wind directions and velocities;

(d) Temperatures and temperature inversion periods, humidity, and other atmospheric conditions;

(e) Possible chemical reactions between air contaminants or between such air contaminants and air gases, moisture or sunlight;

(f) The predominant character of development of the area of the state, such as residential, highly developed industrial area, commercial or other characteristics;

(g) Availability of air-cleaning devices;

(h) Economic feasibility of air-cleaning devices;

(i) Effect on normal human health of particular air contaminants;

(j) Effect on efficiency of industrial operation resulting from use of air-cleaning devices;

(k) Extent of danger to property in the area reasonably to be expected from any particular air contaminants;

(l) Interference with reasonable enjoyment of life by persons in the area which can reasonably be expected to be affected by the air contaminants;

(m) The volume of air contaminants emitted from a particular class of air contamination source;

(n) The economic and industrial development of the state and continuance of public enjoyment of the state's natural resources; and

(o) Other factors which the commission may find applicable.

(3) The commission may establish air quality standards including emission standards for the entire state or an area of the state. The standards shall set forth the maximum amount of air pollution permissible in various categories of air contaminants and may differentiate between different areas of the state, different air contaminants and different air contamination sources or classes thereof. [Formerly 449.785]

468.300. When liability for violation not applicable. The several liabilities which may be imposed pursuant to ORS 448.305, 454.010

to 454.040, 454.205 to 454.255, 454.405, 454.425, 454.505 to 454.535, 454.605 to 454.745 and this chapter upon persons violating the provisions of any rule, standard or order of the commission pertaining to air pollution shall not be so construed as to include any violation which was caused by an act of God, war, strife, riot or other condition as to which any negligence or wilful misconduct on the part of such person was not the proximate cause. [Formerly 449.825]

468.305 General comprehensive plan. Subject to policy direction by the commission, the department shall prepare and develop a general comprehensive plan for the control or abatement of existing air pollution and for the control or prevention of new air pollution in any area of the state in which air pollution is found already existing or in danger of existing. The plan shall recognize varying requirements for different areas of the state. [Formerly 449.782]

468.310 Permits. By rule the commission may require permits for air contamination sources classified by type of air contaminants, by type of air contamination source or by area of the state. The permits shall be issued as provided in ORS 468.065. [Formerly 449.727]

468.315 Activities prohibited without permit; limit on activities with permit. (1) Without first obtaining a permit pursuant to ORS 468.065, no person shall:

(a) Discharge, emit or allow to be discharged or emitted any air contaminant for which a permit is required under ORS 468.310 into the outdoor atmosphere from any air contamination source.

(b) Construct, install, establish, develop, modify, enlarge or operate any air contamination source for which a permit is required under ORS 468.310.

(2) No person shall increase in volume or strength discharges or emissions from any air contamination source for which a permit is required under ORS 468.310 in excess of the permissive discharges or emission specified under an existing permit. [Formerly 449.731]

468.320 Classification of air contamination sources; registration and reporting of sources. (1) By rule the commission may classify air contamination sources according to levels and types of emissions and other characteristics which cause or tend to cause or contribute to air pollution and may require registration or reporting or both for any such class or classes.

(2) Any person in control of an air contamination source of any class for which registration and reporting is required under subsection (1) of this section shall register

**Summary of Proposed PM₁₀ Control Strategy
Grants Pass Urban Growth Boundary (UGB)**

Who? When? Key: L=Local Government, S=State Agency,
E=Existing Strategies, N=New Strategies,
C=New Contingency Plan

Residential Woodburning Controls:

L/S	E	Woodburning public education program;
L	E	Voluntary woodburning curtailment to achieve 25% compliance during air stagnation episodes in the PM ₁₀ Critical Control Area;
S	E	EPA\DEQ certification program for new woodstoves;
S	N	Backup authority from 1991 Legislature for DEQ to adopt mandatory curtailment programs in the event that local governments fail to adopt, implement or enforce local ordinances that are necessary to meet air quality standards (DEQ does not expect that a mandatory curtailment program will be needed to meet standards in Grants Pass, and air monitoring data from 1988-90 further supports this position);
S	N	Statewide ban from 1991 Legislature on the sale and installation of used, non-certified woodstoves;
S	C	State authority from the 1991 Legislature to require removal of non-certified woodstoves upon sale of property.

Open Burning Controls:

L	E	Year-round ban on open burning in the City of Grants Pass;
L	E	Ban on open burning within the Rogue Basin Open Burning Special Control Area when the ventilation index is less than 200;
S	E	Ban on commercial, industrial and land-clearing open burning within the Rogue Basin Open Burning Special Control Area;

Who? When? Key: L=Local Government, S=State Agency,
E=Existing Strategies, N=New Strategies,
C=New Contingency Plan

Open Burning Controls (continued):

- | | | |
|---|---|--|
| S | E | Mandatory forestry smoke management program in the Restricted Area (area west of crest of Cascades plus the Deschutes National Forest) limiting slash burning to times and locations that smoke is not expected to impact designated areas such as the Medford-Ashland AQMA; |
| S | N | Revision of the ventilation criteria for the Rogue Basin Open Burning Special Control Area from the current 200 index to the more restrictive 400 index; |
| S | C | Ban on open burning within the Rogue Basin Open Burning Control Area during November, December, January, and February. |

Industrial Controls:

- | | | |
|---|---|---|
| S | E | New industrial rules adopted in 1989 to require additional air pollution controls on veneer dryers and large wood fired-boilers; |
| S | E | Additional continuous emission monitoring and periodic source testing requirements on industrial sources to maximize performance of control equipment and minimize emissions; |
| S | C | Slight tightening of certain industrial rules to insure meeting RACT/BACT or better emission control; |

HWH:a
RPT\AH15021
(8/14/91)

REQUEST FOR EQC ACTION

Meeting Date: August 22, 1991
Agenda Item: D
Division: Air Quality
Section: Planning & Development

SUBJECT:

Hearing Authorization: PM₁₀ Control Strategy for the new La Grande Nonattainment Area.

PURPOSE:

To meet current Clean Air Act requirements.

ACTION REQUESTED:

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

- Authorize Rulemaking Hearing
- Adopt Rules

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

- Attachment A
- Attachment B
- Attachment C
- Attachment D

- Issue a Contested Case Order
- Approve a Stipulated Order
- Enter an Order
 - Proposed Order

- Attachment



DESCRIPTION OF REQUESTED ACTION:

A control strategy for PM₁₀ (small particulate air pollution) is proposed for the La Grande Nonattainment Area to ensure attainment of federal ambient air quality standards. La Grande became a PM₁₀ nonattainment area on February 8, 1989. Subsequently, exceedances of the daily National Ambient Air Quality Standard (NAAQS) have averaged about twice a year. The control strategy for La Grande must be submitted to the U.S. Environmental Protection Agency by November 15, 1991 under the new Clean Air Act requirements.

The proposed La Grande PM₁₀ control strategy will include the new requirements contained in the Clean Air Act (Act) Amendments of 1990, involving the adoption of Reasonably Available Control Measures (RACM) and a contingency plan. La Grande must meet the same federal deadline of November 15, 1991 to submit PM₁₀ control strategies as the four other nonattainment areas in the State, for which the Environmental Quality Commission (EQC) has previously adopted PM₁₀ control strategies.

RACM provisions of the recently adopted La Grande Air Quality Improvement Ordinance have been incorporated into the control strategy and include a voluntary woodburning curtailment program, a public education program, and fugitive dust control measures. Additional reductions are expected from the phase in of certified woodstoves, a ban on the installation of used, non-certified stoves, and seasonal restrictions on open burning.

The proposed contingency plan would automatically go into effect if the area fails to attain the PM₁₀ NAAQS by the Act deadline of December 31, 1994. The plan includes implementation of a mandatory woodburning curtailment to be established under city ordinance (with State backup authority), State authority for destruction of non-certified woodstoves upon sale of a home, and a requirement to install new industrial controls which will meet the Act requirements for Reasonably and Best Available Control Technology (RACT and BACT).

A complete listing of the control strategy is presented in Attachment F.

AUTHORITY/NEED FOR ACTION:

<input type="checkbox"/> Required by Statute:	_____	Attachment _____
Enactment Date:	_____	
<input checked="" type="checkbox"/> Statutory Authority:	<u>ORS 468.305</u>	Attachment <u>E</u>

A complete listing of the control strategy is presented in Attachment F.

AUTHORITY/NEED FOR ACTION:

<input type="checkbox"/> Required by Statute: _____	Attachment _____
Enactment Date: _____	
<input checked="" type="checkbox"/> Statutory Authority: <u>ORS 468.305</u>	Attachment <u>E</u>
<input type="checkbox"/> Pursuant to Rule: _____	Attachment _____
<input checked="" type="checkbox"/> Pursuant to Federal Law/Rule: _____	Attachment _____

Federal Clean Air Act Amendments of 1990.

Other: _____ Attachment _____

Time Constraints:

The 1990 Clean Air Act requires states to:

- o Submit new and revised PM₁₀ control strategies (including contingency plans) by November 15, 1991;
- o Fully implement the attainment strategies by December 10, 1993;
- o Attain PM₁₀ standards by December 31, 1994; and
- o Implement contingency plan by July 1, 1995, if PM₁₀ standards are not met by December 31, 1994.

DEVELOPMENTAL BACKGROUND:

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

La Grande is a community of 11,500 population located in northeastern Oregon, at an elevation of 2,788 feet. On February 8, 1989, La Grande became Oregon's fifth PM₁₀ Nonattainment Area as a result of exceedances of the daily NAAQS of 150 $\mu\text{g}/\text{m}^3$. Air quality measurements taken from 1987 to 1991 have indicated a total of 11 exceedances of the daily NAAQS, with the highest being 223 $\mu\text{g}/\text{m}^3$ on December 20, 1989. PM₁₀ levels during this same period showed no violations of annual NAAQS of 50 $\mu\text{g}/\text{m}^3$, although annual levels during this period averaged 44 $\mu\text{g}/\text{m}^3$. Subsequent emission inventories and chemical analysis of air samples have shown the primary source to be residential wood combustion during the winter months, and a significant

contributions of soil dust originating from wintertime road sanding, unpaved roads, and windblown soil from agricultural lands outside the nonattainment area.

Shortly after becoming a nonattainment area in 1989, the City of La Grande formed an air quality committee which, with the assistance of the Department, began work on developing local control measures to reduce emissions from residential woodstoves and fugitive dust. On August 7, 1991, the City adopted an ordinance establishing the La Grande Air Quality Improvement Program, which contains the necessary PM₁₀ control measures to meet EPA's RACM/RACT requirements and create the emissions reductions needed to bring La Grande into attainment with the NAAQS by the December 31, 1994 deadline. In addition, House Bill (HB) 2175 was adopted by the Oregon Legislature which provides additional woodheating control strategies.

REGULATED/AFFECTED COMMUNITY CONSTRAINTS/CONSIDERATIONS:

Implementation of the PM₁₀ control strategy involves residents, local governments, state and federal agencies. The group anticipated to be most affected by the proposed PM₁₀ control strategy for the La Grande area are residents with woodstoves or fireplaces. In the event that a PM₁₀ control strategy for La Grande is not adopted as a revision to the State Implementation Plan, the Clean Air Act requires economic sanctions which include restricting federal highway funds, increased emission offset requirements for new or expanding industry, and ultimately a Federal Implementation Plan to be implemented by EPA.

In response to concerns expressed by the City of La Grande regarding the economic impact of the City implementing elements of the PM₁₀ control strategy, the Department has contracted with the City to provide \$15,000 in funding support during the first year of implementation.

Within the regulated community, the proposed RACT\BACT industrial contingency plan may be of concern. However, it is likely that local industry will not be affected by this contingency measure, as they have committed to install new equipment prior to December 31, 1994 which may satisfy contingency plan requirements for emissions control. If this does not occur, and La Grande fails to demonstrate attainment on this date, the contingency requirement for industrial emissions would be implemented.

The Department is proposing adoption of rules that would establish BACT in the contingency plan instead of waiting until eighteen months after the contingency trigger as allowed under the Clean Air Act in order to give industry some certainty of requirements early in the process and to avoid the establishment of two different standards within a short time-frame. Industry and environmental groups may not agree with the Department's determination of BACT and its interpretation of Clean Air Act requirements. The Department's proposal and alternatives are further explained in the documentation for the proposed industrial emission standard rules under agenda item E for the August 22, 1991 EQC meeting.

The full economic impacts are outlined in Attachment C.

PROGRAM CONSIDERATIONS:

The proposed PM₁₀ control measures may require additional Department staff resources. The industrial contingency plan element would require additional Department work in the areas of engineering plan reviews, inspections, monitoring reviews and other compliance assurance activities. This additional work could be integrated into existing permitting program activities and fee structure.

With respect to the mandatory woodburning curtailment contingency, the Department would first try to get the local government to operate and enforce such a program if the contingency appeared to be in danger of being triggered. Failing that, some additional Department field staff would be needed to operate and enforce a mandatory woodburning curtailment program, and the Department would seek EPA funding.

Seasonal restrictions on open burning could impose additional staffing requirements upon local government that is already cutting back on staff. Significant cuts in the City of La Grande operating budget may jeopardize continued operation of the voluntary woodburning curtailment program.

ALTERNATIVES CONSIDERED BY THE DEPARTMENT:

1. Defer action to EPA. If a state fails to meet the Clean Air Act PM₁₀ requirements, EPA is required to impose sanctions and ultimately prepare a Federal Implementation Plan (FIP) to address the PM₁₀ problems.

Meeting Date: June 29, 1990
Agenda Item: D
Page 6

2. Revise the SIP to include a PM₁₀ air pollution control strategy for the La Grande Nonattainment Area.

DEPARTMENT RECOMMENDATION FOR ACTION, WITH RATIONALE:

The Department recommends the second alternative in order to: 1) implement the new legislative authority from HB2175 regarding residential woodburning programs, 2) implement all the provisions of the La Grande Air Quality Improvement Ordinance, 3) assure attainment of PM₁₀ standards, and 4) fulfill Clean Air Act requirements. The first alternative to the recommended action would likely result in continued adverse health impacts in La Grande and other negative impacts on the State economy.

The Department requests authorization to hold public hearings to revise the SIP by adopting attachment A as the PM₁₀ air pollution control strategy for the La Grande Nonattainment Area.

CONSISTENCY WITH STRATEGIC PLAN, AGENCY POLICY, LEGISLATIVE POLICY:

The proposed PM₁₀ control strategy for La Grande is consistent with Goals 2, 3, 4, and 5 of the Strategic Plan. The Department is not aware of any conflicts with agency or legislative policy. The proposed strategy and supporting rules are consistent with the Oregon Benchmarks goal of increasing the percentage of Oregonians living in areas which meet air quality health standards.

ISSUES FOR COMMISSION TO RESOLVE:

Does the EQC concur with the proposed manner of implementing the recent woodheating statutes and the overall balance of the contingency plan?

Meeting Date: June 29, 1990
Agenda Item: D
Page 7

INTENDED FOLLOWUP ACTIONS:

1. Hold a public hearing in La Grande in September 1991.
2. Summarize hearing testimony, respond to issues raised, revise proposal as necessary, and recommend adoption to the Commission at the November 1991 EQC Meeting.
3. Propose adoption, with appropriate revisions in response to testimony, at November 1991 EQC Meeting.

Approved:

Director:

Jul Hahn

Division:

Sh Greenwood

Section:

John Kowalynk

Report Prepared By: Brian Finneran

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Date Prepared: August 9, 1991

BRF:e
RPT\AH15003
8/12/91

Draft State Implementation Plan for Particulate Matter

La Grande, Oregon
Nonattainment Area

A Plan for Attaining and
Maintaining the National Ambient
Air Quality Standard for PM-10

State of Oregon
Department of Environmental Quality
Air Quality Division

August 1991

Table of Contents

Executive Summary	5
4.12.0 State Implementation Plan for La Grande	
PM ₁₀ Nonattainment Area . . . . .	.11
4.12.0.1 Introduction . . . . .	.11
4.12.0.2 SIP Overview . . . . .	.11
4.12.0.3 Area Description . . . . .	.11
4.12.0.4 La Grande Meteorology. . . . .	.12
4.12.0.5 Health Effects of PM ₁₀ and Wood Smoke	14
4.12.1 Ambient Air Quality	15
4.12.1.1 Air Monitoring Methods	16
4.12.1.2 PM ₁₀ Air Quality in La Grande	17
Review of PM ₁₀ Concentrations . . . . .	.18
Hourly Variability . . . . .	.19
Worst Case Day Characteristics . . . . .	.19
Impacts from Sources External to the UGB . . . . .	.19
Background Air Quality . . . . .	.21
Aerosol Chemistry.	22
4.12.2 Nonattainment Area Analysis . . . . .	.23
4.12.2.1 Design Values Determination. . . . .	.23
4.12.2.2 Emission Inventory . . . . .	.24
Introduction . . . . .	.24
Base Year Emission Inventory . . . . .	.25
24-Hour Worst Case Day Inventory . . . . .	.29
Growth Factors . . . . .	.30
Projected Emissions, 1986 to 1994. . . . .	.31
Projected Emissions Beyond 1994. . . . .	.31
4.12.2.3 Source Contributions to PM ₁₀ . . . . .	.33
Ambient Aerosol & Source Emission Analysis . . . . .	.34
Receptor Model Contribution Estimates. . . . .	.35
Average Annual Contributions . . . . .	.35
Multiple Linear Regression Analysis. . . . .	.37
Analysis of Impacts by Source Categories . . . . .	.38
Estimation of "Local" Air Quality Impacts . . . . .	.39
4.12.3 Emission Reduction Analysis . . . . .	.40
4.12.3.1 Emission Reduction Necessary for Attainment. . . . .	.40
Projected 24-Hour Source Impacts in 1994 . . . . .	.40
Projected Annual Source Impacts in 1994. . . . .	.41
4.12.3.2 Evaluation of Potential Control Measures	42
PM ₁₀ Control Strategy Elements . . . . .	.43
Residential Wood Smoke Control Elements. . . . .	.44
The Woodstove Certification Program . . . . .	.44
City of La Grande Air Quality Program. . . . .	.50
Long-Term Woodheating Control Strategy . . . . .	.54
Basis for Woodburning Curtailment Credits. . . . .	.55
State of Oregon Statute. . . . .	.55
Fugitive Dust Control Elements . . . . .	.60

Basis for Dust Emission Control Credits. . . . .	.61
Restrictions on Open Burning . . . . .	.61
Forestry Slash Burning . . . . .	.62
Agricultural Open Burning. . . . .	.63
RACM Elements . . . . .	.63
4.12.3.3 Demonstration of Attainment. . . . .	.67
Strategy Emission Reductions . . . . .	.67
4.12.3.4 Air Quality Standard Maintenance . . . . .	.68
4.12.3.5 Contingency Measures & Emission Reductions . . . . .	.68
4.12.3.6 Enforceability . . . . .	.69
4.12.3.7 Public and Government Involvement. . . . .	.70
4.12.3.8 Emergency Action Plan Provisions . . . . .	.70
4.12.4 Implementation of the Control Strategy. . . . .	.71
4.12.4.1 Schedule for Implementation . . . . .	.71
4.12.4.2 Rules, Regulations and Commitments . . . . .	.71
State of Oregon Rules . . . . .	.71
City of La Grande Ordinances . . . . .	.72
Union County Ordinances. . . . .	.72
Interagency Commitments . . . . .	.72
4.12.4.3 Reasonable Further Progress. . . . .	.72
4.12.4.4 Revisions to the Plan . . . . .	.72
4.12.4.5 New Source Review Permitting Authority . . . . .	.73
4.12.4.6 Delegation of Lead Agency Authority. . . . .	.73
4.12.5 Resource Commitments. . . . .	.73
4.12.6 Public Involvement . . . . .	.73
4.12.6.1 Citizen Advisory Committee . . . . .	.74
4.12.6.2 Public Notice. . . . .	.74
4.12.6.3 Public Hearings. . . . .	.74
4.12.6.4 Intergovernmental Review . . . . .	.74

Appendices

- Appendix 1: PM₁₀ Air Quality Data, 1987 - 1990
- Appendix 2: Methodology for Estimating Design Values
- Appendix 3: La Grande Detailed Emission Inventories
- Appendix 4: City of La Grande Air Quality Improvement Program
- Appendix 5: Winter Road Sanding Commitment, Oregon Dept. of Transportation
- Appendix 6: Union County Field Burning Ordinances
- Appendix 7: Woodburning Curtailment Call Methodology
- Appendix 8: Demonstration of Attainment & Maintenance Calculations

List of Tables

<u>Table</u>	<u>Title</u>	<u>Page</u>
4.12.1-1	Data Collection Periods by Method	17
4.12.1-2	PM ₁₀ Maximum Concentrations, 24-Hr Average	18
4.12.1-3	PM ₁₀ 24-hr. NAAQS Exceedance Periods	18
4.12.1-4	Summary of PM ₁₀ Data	19
4.12.2-1	Design Values Summary	24
4.12.2-2	1986 UGB Annual Emission Inventory	28
4.12.2-3	24-Hour Worst Case Inventory, 1986	30
4.12.2-4	1994 Estimated Emissions	31
4.12.2-5	1994 to 2000 Annual Emissions.	33
4.12.2-6	1994 to 2000 Worst Case Day Emissions.	33
4.12.2-7	Average Winter Exceedance Day Source Contribution Estimates	35
4.12.2-8	Annual Average PM ₁₀ Source Contributions	37
4.12.2-9	Background PM ₁₀ Source Contributions	39
4.12.2-10	Average Exceedance Day "Local" Source Impacts.	39
4.12.2-11	Annual Average "Local" Source Impacts.	39
4.12.3-1	Projected Source Impacts, 24-Hr Worst Case Day	41
4.12.3-2	Projected Source Impacts, Annual Average Case	42
4.12.3-3	PM ₁₀ Control Strategy Elements	44
4.12.3-4	Emission Trends for Woodburning Devices	48
4.12.3-5	Emission Trends in Woodheating, 1994-1996	49
4.12.3-6	Emission Trends in Woodheating, 1996-2000	50
4.12.3-7	Summary of 24-Hour Emission Reductions	68

List of Figures

<u>Figure</u>	<u>Title</u>	<u>Page</u>
4.12.0-1	Nonattainment Area Map	13
4.12.1-1	Winter PM ₁₀ Distribution Map	26
4.12.1-2	Diurnal & Seasonal Variations in PM ₁₀	27
4.12.2-1	La Grande PM ₁₀ Emission Inventories	36
4.12.2-2	1987 to 2000 Emission Projections.	36
4.12.2-3	La Grande PM ₁₀ Annual Source Contributions	38

Executive Summary

The U.S. Environmental Protection Agency (EPA) adopted a new particulate National Ambient Air Quality Standard (NAAQS) for PM₁₀ on July 1, 1987. PM₁₀ particulate is less than 10 micrometers in aerodynamic diameter or about one-tenth of the diameter of a human hair. The NAAQS adopted by the US Environmental Protection Agency were established to protect public health and welfare. The Clean Air Act requires that states develop and adopt State Implementation Plan (SIP) revisions to assure that areas which exceed the PM₁₀ NAAQS are brought into attainment within the time frames prescribed by the Clean Air Act (December 31, 1994). This document describes the State of Oregon's plan to attain the PM₁₀ standard in La Grande.

High exposure to particulate matter is of concern because of human health effects such as changes in lung functions and increased respiratory symptoms, aggravation of existing respiratory and cardiovascular disease, alteration in the body's defense system against foreign materials, damage to lung tissue, increased risk of cancer and, in extreme cases, premature death. Most sensitive to the effects of particulate matter are people with chronic obstructive pulmonary cardiovascular disease and those with influenza, asthmatics, the elderly, children and mouth-breathers.

Air quality measurements taken in La Grande have indicated that the 24-hour PM₁₀ health NAAQS was exceeded an average 2 days per year, mostly during the winter months during the period of 1988 to 1989. The annual average concentration of PM₁₀ during the years 1987-1990 of 47 $\mu\text{g}/\text{m}^3$ does not exceed the annual average PM₁₀ NAAQS of 50 $\mu\text{g}/\text{m}^3$.

The 24-hour PM₁₀ NAAQS is 150 micrograms per cubic meter of air ($\mu\text{g}/\text{m}^3$), not to be exceeded more than three times averaged over three consecutive calendar years. Winter 24-hour concentrations of PM₁₀ in La Grande have reached levels as high as 223 $\mu\text{g}/\text{m}^3$ on Dec. 20, 1989.

An inventory of PM₁₀ emissions developed for the La Grande Urban Growth Boundary indicates that the major sources of particulate emissions during 1986 winter periods of worst-case 24-hour PM₁₀ concentrations are residential wood combustion (58%), industrial emissions (5%) and soil dust (34%). On an annual basis, these sources contribute 45%, 9% and 39%, respectively. Other miscellaneous sources account for the remaining 7%. Emission inventory information representative of worst-case 24-hour conditions has been verified through receptor modeling techniques which actually measure source contributions to ambient air quality on the basis of their chemical "fingerprints."

Extensive air monitoring surveys have been completed which clearly demonstrate that the Willow Street site in central La Grande has the highest winter PM₁₀ concentrations within the airshed. Based on these surveys, ambient air monitoring conducted at the Willow Street site have been shown to generally represent the highest PM₁₀ levels within the Urban Growth Boundary. Development of a SIP which assures attainment and maintenance of the NAAQS at the Willow Street site should therefore be adequate to demonstrate attainment of the NAAQS anywhere within the airshed.

PM₁₀ design values are those representative 24-hour worst case and annual average concentrations from which reductions must be made to achieve the NAAQS. Analysis of all of the available PM₁₀ air quality data over the period of December, 1987 to March, 1991 (the largest available database) indicates a 24-hour design value of 190 $\mu\text{g}/\text{m}^3$. No annual design value is needed since La Grande does not exceed the annual NAAQS. The 24-hour design value, adjusted for expected or potential emission changes during the 1986-1994 period is 182 $\mu\text{g}/\text{m}^3$ due largely to reduction in emissions from woodburning achieved through the woodstove certification program. Control strategies included in this plan have been designed to reduce projected 24-hour concentrations of PM₁₀ by 32 $\mu\text{g}/\text{m}^3$ (182 - 150 $\mu\text{g}/\text{m}^3$). To achieve these 24-hour average air quality improvements will require an 18% reduction in 24-hour worst case day emissions within the La Grande Urban Growth Boundary.

Control Strategy Elements

The control strategies needed to assure attainment of the PM₁₀ National Ambient Air Quality Standards (NAAQS) focus on control of residential wood combustion and fugitive dust emission. Other strategies include progressive programs to further reduce fugitive dust and woodburning emissions.

Residential Wood Combustion Strategies

The principal means of achieving the needed reductions is through an effective voluntary woodburning curtailment and emission reduction programs. At least a 30% reduction in wood smoke emissions is needed on poor ventilation days to attain the 24-hour NAAQS. This reduction will have to come from most of La Grande's estimated 3,000 woodburning households which will have to forego use of their woodstoves and fireplaces during air stagnation episodes. Additional reductions throughout the heating season from the phase in of certified woodstoves and a ban on the installation of used, conventional stoves will help achieve attainment of the 24-hour NAAQS. A strong public education program is an essential element of the strategy.

The reduction strategy is implemented through the City of La Grande's Air Quality Program and the Department/EPA woodstove certification program. The principal contingency strategies are implementation of a mandatory woodburning curtailment ordinance adopted by the City of La Grande or, if local governments fail to act, the implementation of a mandatory woodburning curtailment program by the Department, as well as the state-required removal of noncertified stoves upon sale of a home.

Fugitive Dust Control Measures

A 10% reduction in winter worst case day dust emissions will be achieved through the use of lower silt content road sanding aggregate, application of less road sanding material and rapid cleanup of used road sanding aggregate. The sanding cleanup will achieve fugitive dust emissions reductions needed to assure attainment of the 24-hour NAAQS. The City has also adopted a series of dust control measures including a program to stabilize dust from unpaved gravel roads, the paving of gravel roads, reduction of dust emissions from commercial staging areas, the curbing of all new paved streets and stabilization of bare ground through planting of vegetation or the use of chemical palliative.

Other Strategies

The City of La Grande has adopted a resolution to prohibit residential open burning and the use of burn barrels on "Red" and "Yellow" woodburning curtailment days. Open burning is prohibited at all times other than during the months of April-May, October and November, thereby eliminating burning during winter periods when air quality standard exceedances are likely.

In addition, forestry slash burning impacts in the nonattainment area will be minimized through voluntary agreements among forest land managers. This program will help assure that forestry open burning does not adversely affect La Grande air quality on winter woodheating curtailment days.

Agricultural burning conducted within the Grande Ronde Valley is managed under a new Union County ordinance which insures that smoke from the open field burning does not impact the City of La Grande. Since the burning occurs during the summer months when NAAQS violations have not occurred, regulation of field burning for purposes of PM₁₀ attainment is not a required element of the attainment strategy.

RACM\RACT Control Strategy Elements

The Clean Air Act requires that PM₁₀ control strategies include Reasonably Available Control Measures (RACM). EPA guidance indicates listed RACM measures must be included in the attainment plan if needed to demonstrate attainment. Otherwise, RACM is to be

included in the contingency plan for all significant source categories contributing to PM₁₀ violations. RACM for industrial point sources is referred to as Reasonably Available Control Technology (RACT).

For an area that fails to meet PM₁₀ standards by December 31, 1994, the Clean Air Act requires that the area be redesignated as a "serious" nonattainment area and that a revised PM₁₀ control strategy include additional control measures. EPA guidance indicates Best Available Control Measures (BACM) must be included for all significant source categories contributing to PM₁₀ violations. BACM for industrial point sources is referred to as Best Available Control Technology (BACT).

The La Grande attainment strategy includes numerous Reasonably Available Control Measures (RACM) for residential woodburning, urban fugitive dust sources and prescribed silvacultural and agricultural burning.

Contingency Measures

The Clean Air Act Amendments of 1990 require states to include a contingency plan in SIPs that can be automatically implemented in the event that the base attainment strategy fails to attain the NAAQS. By the Act attainment date, BACT/BACM is also required in such areas that do not meet the attainment date and are redesignated to serious nonattainment areas.

The La Grande PM₁₀ SIP includes three contingency measures: (1) a mandatory woodburning curtailment program established under City of La Grande ordinance designed to achieve at least a 50% compliance rate (or implemented under the Department's authority should local government fail to act- this also meets RACM requirements), (2) a State requirement for removal of noncertified woodstoves upon sale of property, (3) a requirement to install new industrial source controls which will meet EPA's RACT\BACT requirement. Industrial source controls were included as a contingency measure because this source becomes a significant portion of the emission inventory once woodburning and fugitive dust emissions have been controlled.

Strategy Emission Reduction - 24-Hour Worst Case Day

Attainment of the 24-hour NAAQS in 1994 will require a 18% reduction in worst case day emissions equalling a reduction of 1,447 pounds per day. The needed reduction is achieved through the strategy elements listed below.

Because emission reductions are calculated on a declining balance basis, the product of percentage credits and total reduction (2,076 pounds/day) will not yield the individual element emission reductions shown. (See Appendix 8)

No credits have been taken for the City of La Grande's public education programs and the voluntary forestry smoke management program. Credits related to restrictions on open burning or many of the fugitive dust control measures, included in the City's Air Quality Program, are not included in the demonstration of attainment because the emissions from the sources cannot be inventoried.

**Summary of 24-Hour Emission Reductions
To Be Achieved by 1994**

<u>Strategy Element</u>	<u>Credit</u>	<u>Emission Reduction</u>
Winter Road Sanding Practices	10%	134 Pounds/Day
Woodburning Strategies:		
- Woodburning Curtailment	30%	1,196 Pounds/Day
- Certification of Woodstoves	27%	746 Pounds/Day
		<hr style="width: 10%; margin: 0 auto;"/>
Woodstove Strategies, Total		1,942 Pounds/Day
Total reduction from all strategies....		2,076 Pounds/Day
Required emission reduction		1,447 Pounds/Day

Air Quality Standard Maintenance

During the six year period following attainment of the NAAQS, a net decrease in emissions is projected to occur as a result of attainment strategies and the replacement of older conventional stoves with certified cordwood and pelletstoves, offsetting increases in fugitive dust and transportation emissions. Both the 24-hour and annual NAAQS are projected to be maintained past the year 2000 at which time worst case day and the annual average PM₁₀ air quality is projected to be 134 and 46 µg/m³, respectively.

Enforceability

The Clean Air Act requires SIP control strategies to be enforceable. Based on EPA guidance, a voluntary woodstove curtailment program may be credited with up to a 30% emission reduction. Emission reductions achieved in other communities that have operated aggressive voluntary curtailment programs have been shown to obtain reduction that are substantially greater than 30%. The actual average compliance rate on days surveyed during the 1989-90 season under Klamath County's voluntary program, for example, was 45% as measured by infrared field surveys.

The road sanding strategy is implemented through a City of La Grande's Air Quality Program and Development Standards Section of the Zoning Ordinance as well as commitments from the Highway

Division of the Oregon Department of Transportation. Industrial control measures are enforced through the Department. Union County is responsible for enforcement of the agricultural field burning smoke management program. The Oregon Department of Forestry is responsible for enforcing a mandatory forestry smoke management program, should it be required.

Public and Governmental Involvement

The PM₁₀ emission control programs implemented through this revision to the State Implementation Plan have been developed in close cooperation with the La Grande Air Quality Advisory Committee, the City of La Grande, the Oregon Department of Forestry, the Union County Seed Growers Association and others. Public comment on the SIP has been received through the written comment prior to and during public hearings on the SIP.

4.12.0 State Implementation Plan for La Grande

4.12.0.1 Introduction

On July 1, 1987, the Environmental Protection Agency (EPA) promulgated new federal ambient air quality standards for particles less than or equal to 10 micrometers in aerodynamic diameter (PM₁₀) to replace the Total Suspended Particulate (TSP) standard.¹ The standard became effective 30 days later on July 31, 1987. Because PM₁₀ air monitoring has demonstrated that La Grande exceeds the 24-hour PM₁₀ National Ambient Air Quality Standard (NAAQS), EPA has designated it as a moderate nonattainment area.

Section 110 of the Clean Air Act Amendments of 1990 requires states to adopt and submit plans (State Implementation Plans or SIPs) to EPA by not later than November 15, 1991. The Act allows EPA twelve months to approve or disapprove the plan. The plan must provide for attainment of the standard as expeditiously as practicable but no later than December 31, 1994.

The Air Quality Division of the Department of Environmental Quality has developed this plan in consultation with officials of the City of La Grande and Union County, the Oregon Department of Transportation and the US EPA. The plan was prepared in accordance with the regulations and requirements of the Federal Clean Air Act as amended in November, 1990 and the US Environmental Protection Agency. The Department believes that the PM₁₀ plan can achieve attainment of the NAAQS within the time frame required by the Act.

4.12.0.2 SIP Overview

This revision to the State Implementation Plan (SIP) has six sections. The first (4.12.1) provides a description of PM₁₀ ambient air quality in La Grande; Section 4.12.2 describes the PM₁₀ air quality problem within the La Grande Nonattainment Area; Section 4.12.3 describes emission reductions needed to attain NAAQS; Section 4.12.4 describes implementation of the control strategies, Section 5 describes resource commitments and Section 6 discusses public involvement.

4.12.0.3 Area Description

La Grande is located in northeastern Oregon at an elevation of 2,788 feet. The area is typified by its semi-arid, high desert climate where annual rainfall (30 year average) is only 20 inches. The population within the La Grande urban growth boundary (the

¹A micrometer (μm) is a unit of length equal to about 1/25,000 of an inch. For comparison, the thickness of a human hair is about 100 to 200 micrometers.

nonattainment area) is about 12,300 (1980 census). About 4,500 households are located within the Urban Growth Boundary.

La Grande is located in the Grande Ronde Valley which is a relatively flat land area 25 miles from east to west that has been formed by the Grande Ronde River. Wallowa-Whitman National Forest lands extend for wide areas to the east and west of the Valley. The surrounding mountains reach nearly 10,000 feet, creating topographical barriers that often restrict air mass dispersion.

Figure 4.12.0-1 shows the boundaries of the La Grande Urban Growth Boundary which has been adopted as the nonattainment area boundary. The criteria for selection of the UGB as the nonattainment area are as follows:

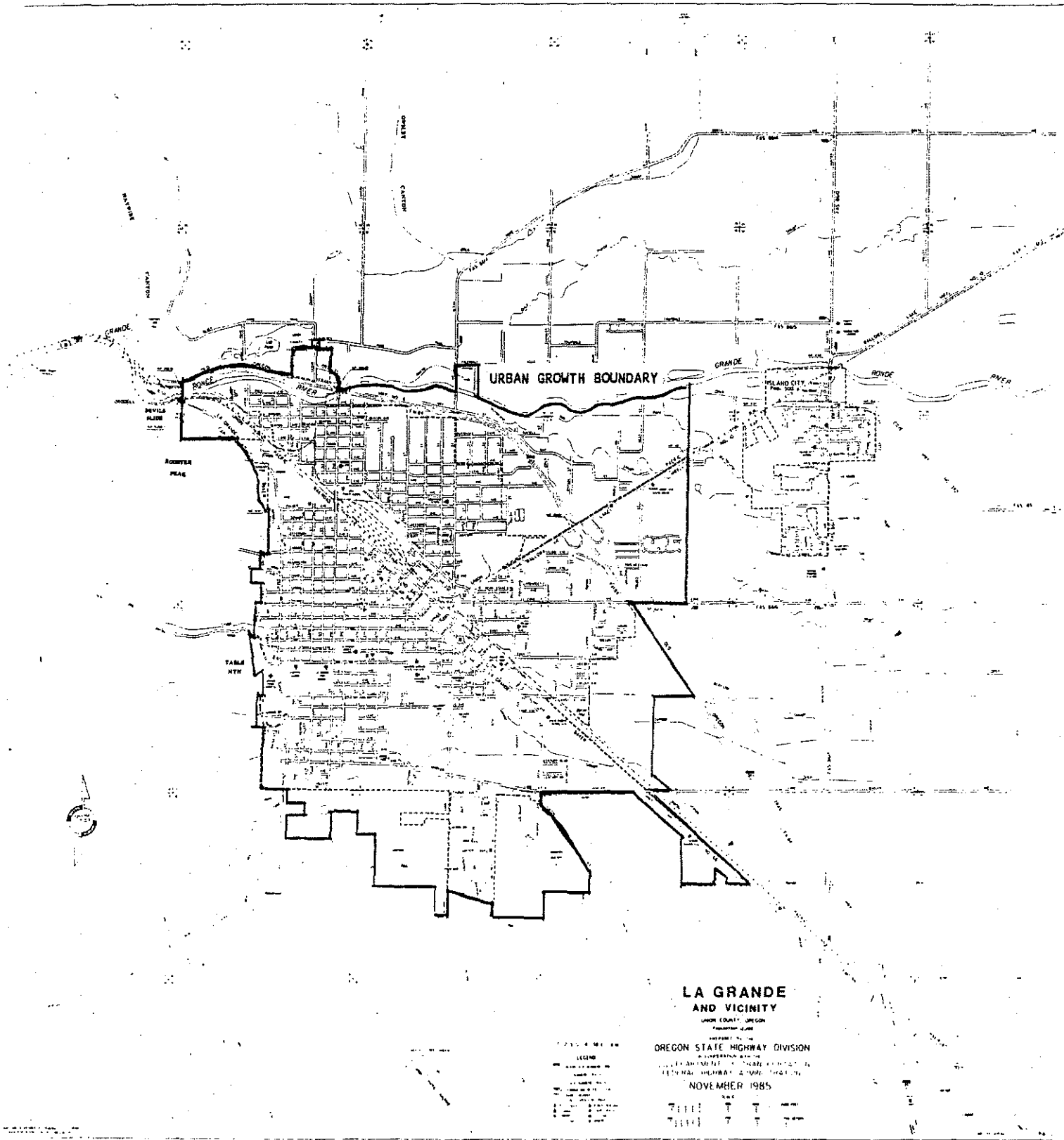
1. The nonattainment boundary must include the geographical area within which national ambient air quality standards are currently being exceeded. Air monitoring saturation studies completed in December of 1985 indicate that although minor day-to-day variations in the pattern of PM₁₀ levels exist, depending on wind direction a consistent pattern of maximum concentrations near the Willow Street monitoring site is present. The PM₁₀ levels appear to follow the emission density of homes (woodstoves) in the community.
2. The nonattainment boundary must include the area within which air standards may be exceeded in the future. EPA requires that SIP control strategies consider future population, transportation, housing and industrial growth to assure that air standards will be attained and maintained. Development of a strategy to assure maintenance of air standards requires that the nonattainment area boundary be consistent with the regional planning boundary for which community growth projections are available.
3. The nonattainment area must be a legally defined boundary recognized by local governments. A legal definition is required for rule making purposes. Additionally, some component of the control strategy may need to be implemented through county land use planning ordinances tied to the Urban Growth Boundary.

Designation of the Urban Growth Boundary as the nonattainment area is the only legally defined boundary that meets all of the above criteria.

4.12.0.4 La Grande Meteorology

Because of its elevation, dry climate and low frequency of cloud cover, La Grande experiences very strong and shallow night time winter radiation inversions which break up with day time solar heating. In wintertime, frigid arctic air masses frequently invade the Grande Ronde Valley. Temperatures can remain well below freezing for several weeks at a time.

Figure 4.12.0-1: Nonattainment Area Map



Winter nights are commonly clear and cool. Under these conditions, nocturnal radiation inversions occur as a result of the snow covered and frozen ground surface, creating temperature inversions over La Grande. These inversions are confined and maintained by the surrounding terrain, creating an impenetrable barrier to local woodstove and fireplace smoke.

4.12.0.5 Health Effects of PM₁₀ and Wood Smoke

Particulate matter measuring less than or equal to 10 micrometers is considered a risk to human health due to the body's inability to effectively filter out particles of this size. These particles deeply penetrate and become lodged in the alveolar regions of the respiratory system for days, weeks or even years where they trigger biochemical and morphological changes in the lungs.²

For example, constriction of air passages (i.e., reduced air flow) occurs rapidly upon exposure to PM₁₀. Episodic and continuous exposure aggravates chronic respiratory diseases such as asthma, bronchitis, and emphysema which in turn restrict the lung's ability to transfer oxygen into the bloodstream. Traditionally, children, the elderly, and cigarette smokers are the most susceptible to lung dysfunctions and are therefore at greatest risk from PM₁₀ exposure.³ Episodic exposure can also cause changes in the activity of the lung's mucous secretions and accelerates the mucociliary action to sweep the particulates out of the lungs. These changes result in increased symptoms of cough, phlegm, and dyspnea (difficulty in breathing). Continuous exposure can inhibit defense mechanisms by introducing new particles into the lungs and redistributing those being swept out. This slows the clearance of the bronchial system thus increasing susceptibility to acute bacterial and viral infections.

The increased stress on the pulmonary system caused by PM₁₀ exposure is usually tolerable for those with healthy respiratory systems, however, it can lead to irreversible or fatal damage in people already suffering from cardiopulmonary disease, typically children, the elderly, the ill, and cigarette smokers.⁴ Another group that falls into the high risk category are people who breathe through their mouths.⁴

²J. Koenig, T.V. Larson, P. Jenkins, D. Calvert, N. Maykut and W. Pierson, "Wood Smoke: Health Effects and Legislation," Health Effects of Woodsmoke, Northwest Center for Occupational Health and Safety, January 20, 1988.

³U.S. Environmental Protection Agency, Second Addendum to Air Quality Criteria for Particulate Matter and Sulphur Oxides, (1982: Assessment of Newly Available Health Effects). EPA 600/8-86-020.

This group includes a wide range of people from chronic mouth-breathers to anyone involved in outdoor exercise and heavy labor. During mouth-breathing, particulate matter is breathed more directly into the lungs since it bypasses the filtering systems of the nasal passages.

Among the sources of PM₁₀ emissions, wood smoke is of particular concern in La Grande because it accounts for a majority of the small particulate matter measured in the nonattainment area. A description of emission sources is found in Section 4.12.2.2. These particles are less than 1 μm in diameter and remain suspended in the air for long periods of time. Because of their small size and their ability to remain airborne, they are easily inhaled and lodged in the alveolar region of the lungs. These particles can also act as carriers for toxic chemicals which are transported deep into the respiratory system. Some of these toxics are then absorbed into the bloodstream.

Wood smoke contains at least fourteen carcinogenic compounds including benzo(a)pyrene, benzo(a)anthracene, and other polycyclic organic materials. Additionally, wood smoke contains several other hazardous compounds such as aldehydes, phenols, carbon monoxide and volatile organic vapors. These compounds can cause or contribute to illnesses ranging from neurological dysfunctions and headaches to lung cancer.³ Many of the components of wood smoke are also found in cigarette smoke and coke oven emissions which can affect the cilia in a similar manner making it difficult for the body to expel the particulate matter. Because wood smoke concentrations are highest in residential areas, a large segment of the population is routinely exposed to wood smoke pollution in the winter months. Additionally, it is those people who are most sensitive, children, the elderly, and the ill, who spend the most time in their homes, thereby increasing their risk.⁵

4.12.1 Ambient Air Quality

Particulate ambient air quality monitoring for Total Suspended Particulate (TSP) began in La Grande in February, 1970 at Eastern Oregon State College Science Building. During the period of 1970 to 1976, annual average TSP concentrations at this site averaged 43 $\mu\text{g}/\text{m}^3$ with maximum 24-hour TSP concentrations reaching 356 $\mu\text{g}/\text{m}^3$ in 1974. TSP sampling was also conducted at a site on North Ash Street during the period October, 1984 to May, 1985 and at the Observer from January, 1986 to December, 1984. While levels at these sites were occasionally over the TSP NAAQS,

⁵P.G. Jenkins, Washington Wood Smoke: Emissions, Impacts and Reduction Strategies, Washington Department of Ecology, Olympia, Washington. December, 1986.

it was thought that rural fugitive dust (considered uncontrollable and not a health hazard by EPA) was the principal contributing source.

PM₁₀ air quality monitoring began at the North Ash Street site in October of 1984 and was terminated in May, 1986 when the site was relocated to North Willow Street. PM₁₀ monitoring began there in December of 1987 following completion of the December, 1985 area-wide survey designed to characterize the spacial distribution of PM₁₀ concentrations.⁶ Results from this saturation study demonstrated that the Eastern Oregon State College and Observer Building monitoring sites were not representative of the highest levels of PM₁₀ in the airshed and that levels recorded at the North Willow Street site better represented worst case levels within the area.

The PM₁₀ concentration contours shown in Figure 4.12.1-1 were developed from the saturation survey. The Figure also shows the location of the Willow Street site. A review of the area encompassed by the 150 $\mu\text{g}/\text{m}^3$ (the 24-hour NAAQS) contour shows that it best approximates the Urban Growth Boundary.

In January of 1990, the Department conducted evening mobile nephelometer surveys to further verify the spacial distribution of PM₁₀ concentrations. The results of the 1985 and 1990 surveys show that although the particulate mass vary slightly from day to day depending on wind directions and mixing height, the surveys are basically consistent with the findings of the December, 1985 particulate survey that identified the Willow Street area as the location of the highest concentrations.⁶ The surveys also provide evidence that the major sources of PM₁₀ are found within the residential area of La Grande where woodstove emission density is greatest. Figure 4.12.1-1 shows the distribution of concentrations measured during the period of December 23-27, 1985.

4.12.1.1 Air Monitoring Methods

Several sampling methods have been used to measure PM₁₀ concentrations in La Grande:

Integrated Nephelometer measurements of light scattering (a surrogate for PM₁₀) have been conducted during the winter months of highest PM₁₀ concentrations. This method provides hourly light scattering averages which are highly correlated to PM₁₀ concentrations measured by the Medium-Volume sampler.

⁶Spatial Distribution of PM₁₀ in La Grande, Oregon. Program Planning & Development Section, Air Quality Division, State of Oregon Department of Environmental Quality. June, 1991.

The PM₁₀ Medium-Volume sampler collects PM₁₀ aerosol using a 12 port, 47 mm filter sequencing system that is programmed to collect 24-hour samples. The sampler pulls ambient air at a 4 CFM flow rate through a 10 μm Sierra-Anderson 254 inlet providing a PM₁₀ cut point. A dual-port system capable of simultaneously collecting aerosol on both Teflon and quartz filter substrate is used to allow complete chemical analysis for Chemical Mass Balance receptor modeling purposes. Because of the excellent agreement between PM₁₀ concentrations measured by the Medium-Vol and the HV-SSI reference method, EPA has designated the Medium-Vol sampler as an acceptable equivalent method.

The High Volume air sampler collects samples of Total Suspended Particulate (TSP). The method uses pre-weighted 8" X 10" filters through which air is drawn at 50 CFM over a 24-hour period. Because these samplers are not equipped with a size selective inlet, the upper limit of particle size captured on the filter may reach 100 μm. Prior to EPA's adoption of the PM₁₀ NAAQS, this method was the standard reference method for measurement of airborne particulate matter at the Observer Building, Eastern Oregon State College and the Ash Street sites. This sampling method is no longer in use.

All of the data discussed below was collected at the Willow Street site in La Grande. Table 4.12.1-1 lists monitoring data collection periods by measurement method.

Table 4.12.1-1: Data Collection Periods by Method
Willow Street Site

Measurement Method	Began	Terminated
Integrating Nephelometer (Light Scattering or Bscat)	Aug., 1989	Current
PM ₁₀ Medium-Vol. (MV) * (Daily Sampling)	Dec., 1987	Current
High-Volume TSP (TSP)	Feb., 1986	Sept., 1987

* Both Teflon and Quartz filter substrate are used.

4.12.1.2 PM₁₀ Air Quality in La Grande

Figure 4.12.1-2 illustrates the hourly and seasonal variations in PM₁₀ concentrations in La Grande. As seen in the Figure, the highest 24-hour concentrations occur during the winter space heating season when PM₁₀ concentrations have reached levels as high as 223 μg/m³, significantly exceeding the 24-hour National Ambient Air Quality Standard. Peak 24-hour concentrations have

also occurred during the Spring (May 11, 1988) and in the Fall months (September 5, 1988). Chemical analysis of the May, 1988 sample indicate that the primary contributor was fugitive dust. The principal cause of the September, 1988 exceedance was wildfire smoke. Seasonal trends in the data show a clear pattern of increasing concentrations in the fall and winter months as woodstove use increases and atmospheric dispersion decreases, followed by lower levels during the spring and summer months as ventilation improves and woodstove emissions are reduced.

Review of PM₁₀ Concentrations

The four highest concentrations of PM₁₀ mass measured in La Grande during the past 3 years are listed in Table 4.12.1-2, below. Periods when PM₁₀ levels have exceeded the NAAQS are listed in Table 4.12.1-3, below:

Table 4.12.1-2: PM₁₀ Maximum Concentrations, 24-hour Averages

	µg/m ³	Date	M e t h o d
Highest Value	223	891220	Medium-Vol.
Second High	201	881216	Medium-Vol.
Third High	200	880511	Medium-Vol.
Fourth High	190	891213	Nephelometer Est.

Table 4.12.1-3: PM₁₀ 24-hr. NAAQS Exceedance Periods

Date	µg/m ³	Comments
871231	159	
880118	182	
880511	200 *	Sample did not run a full 24-hrs
880905	187 *	Impact from Tee Pee Butte Forest Fire
881216	201	
881217	172	
891219	168	
891220	223	
900331	179	
910128	173	

* Note: These periods are excluded from the attainment analysis process. Tabulation current as of July, 1991.

Table 4.12.1-4 summarizes PM₁₀ monitoring data for the Dec., 1987 to Dec. 1990 period over which the design values were calculated. Appendix 1 contains a tabulation of daily PM₁₀ concentrations over the period this period.

Table 4.12.1-4: Summary PM₁₀ Data
($\mu\text{g}/\text{m}^3$)

All Data	1986	1987	1988	1989	1990	
No. Days Sampled	1191	52	58	334	336	361
Arithmetic Mean **	--	54	53	46	42	36
Maximum Value	223 (891220)	109	159	201	223	179
Second High	201 (881216)	104	137	200	168	118
No. Days > 150	9	0	1	5*	2	1

Data Summary from 1990 Air Quality Division Annual Report.

* Includes Sept. 5, 1988 sample influenced by wildfire smoke.

** Annual average values computed as prescribed in 40CFR52 Appendix K.

Hourly Variability

Hourly variations in PM₁₀ levels on worst-case winter days can be seen in the diurnal variations of light scattering measurements from the Willow Street site (Figure 4.12.1-2). Particulate concentrations begin increasing from a mid-day low, peak during the 10 PM to 1 AM period and then steadily decrease until 8-9 AM at which time the levels increase before again reaching mid-day concentrations. The early morning peak at 8-9 AM is believed to be associated with early morning woodstove start up by La Grande residents.

Worst Case Day Characteristics

During the December, 1987 to December, 1990 period, the number of times the 24-hour NAAQS was exceeded varied from one to five days per year, mostly during the winter months of late October to April. During these periods, residential woodheating reaches it's peak and atmospheric dispersion is at it's poorest. Worst case winter days typically have daily average temperatures of 23 °F (45 degree heating days), snow cover, intense, shallow temperature inversions and extended periods of calm winds. These conditions occur during periods when snow producing storm systems are followed by stable high pressure systems. The spacial distribution of PM₁₀ concentrations during worst case day conditions is shown in Figure 4.12.1-1.⁷

Impacts from Sources External to the Urban Growth Boundary

The sources of emissions outside of the UGB include agricultural tilling dust, windblown soils, wildfire smoke,

⁷D. Wallace, "Distribution of PM₁₀ Within the La Grande Nonattainment Area" State of Oregon Department of Environmental Quality, Air Quality Division. Report 91-2. June, 1991.

prescribed (slash) and field burning smoke all of which form the background PM₁₀ aerosol loading transported into the UGB. In addition, aerosols transported over long distances from global and interstate sources also contribute, in a small amount, to the background air quality.

Slash Burning

Slash burning on the Wallowa-Whitman National Forest is conducted on about 35,000 acres of forest land, consuming about 100,000 tons of fuel.⁸ This generates about 2,600 metric tons of PM₁₀ emissions. Most of this burning (73%) occurs during the months of April and May with a large part of the remaining balance occurring in October. About 2% of the burning occurs during the winter space heating season of November 1 to April 1. Although there is public concern about slash burning smoke impacts on the community, monitoring information available to date has not indicated that slash burning smoke is a major contributor to PM₁₀ nonattainment in La Grande.⁹

Field Burning

Within the Grande Ronde Valley, approximately 12,000 acres are burned annually of which 8,000 is grass seed stubble and 4,000 is cereal grain stubble. Burning begins in late July and continues until late September, with most of the burning occurring in August. About 50 growers are involved in the program which is coordinated through a voluntary smoke management program. Burning advisories are issued daily during the burning season when fuel and smoke dispersion conditions are favorable. During the 1987 season, field burning smoke impacted La Grande for 11 hours resulting in numerous public complaints. None of La Grande's PM₁₀ nonattainment periods are associated with field burning activity. Chemical analysis of PM₁₀ samples collected during field burning smoke impact events of August, 1988 indicated a 20% contribution to the PM₁₀ mass concentration of 22 to 41 $\mu\text{g}/\text{m}^3$, 24-hour average.

Wildfire Smoke

Wildfire smoke can be a very significant contributor to PM₁₀ levels in La Grande. The September 5, 1988 exceedance of 187 $\mu\text{g}/\text{m}^3$ was caused, in part, by smoke from the Tee Pee Butte Wildfire located about 30 miles SSE of La Grande. Wildfires are a common occurrence in Northeastern Oregon. During 1989, 157 wildfires were

⁸Oregon Smoke Management Annual Report, 1989. State of Oregon Department of Forestry. October 1990.

⁹La Grande PM₁₀ Source Contributions: Chemical Mass Balance Analysis of PM₁₀ Source Contributions. Department of Environmental Quality, Air Quality Division. August, 1990.

reported burning 9,300 acres.¹⁰ Major fires such as Tee Pee Butte create dense clouds of smoke that can be transported long distances and remain active for long periods of time. Since EPA considers NAAQS exceedances caused by wildfire smoke to be exceptional events that are excluded from the nonattainment status determination, wildfire emission control measures are not included in the control strategy.

Agricultural Dust

PM₁₀ soil dust emissions associated with agricultural operations in Union County are estimated to be about 780 tons per year, assuming that about 103,000 acres of land is tilled each year. In addition, wind blown dust from erodible soils occurs during the summer months. During the winter months, periods of high easterly or southeasterly winds, transport dust from fields located north, east and south of Island City into the La Grande nonattainment area.

Background Air Quality

PM₁₀ aerosols from sources external to the UGB collectively contribute to background PM₁₀ air quality. It is important to quantify the annual and 24-hour worst case day background since this component of the total PM₁₀ mass loading measured within the UGB is often not subject to the provisions of the nonattainment area control strategy. As a result, air quality improvements must be achieved by reducing emissions from those sources that contribute to the locally-generated component of the aerosol.

There have been two PM₁₀ background monitoring sites operated in Eastern Oregon. The first is located in the Quartz Creek Valley (elevation 5,390 ft) at the Quartz Mountain Gold Project 50 miles east of Klamath Falls.¹¹ The Quartz Mountain data was collected by Air Sciences, Inc. of Lakewood, Colorado under contract to the Quartz Mountain mining project. The data was collected pursuant to Federal EIS requirements imposed by the US Forest Service, Bly District. The data was collected pursuant to standard EPA quality assurance requirements. The second site was operated by Portland General Electric near its Boardman coal fired power plant, about 70 miles west of La Grande from December, 1983 to June, 1985. 1984 is the only complete year of sampling during which the monitor was operated on a 6th day schedule collecting 38 samples.

¹⁰1989 Forest Fire Summary. Oregon State Department of Forestry. December, 1990.

¹¹Quartz Mountain Gold Project Environmental Impact Statement. Prepared for the Fremont National Forest by Air Sciences, Inc. Lakewood, Colorado. February, 1989.

Worst Case Winter Day Background

The Quartz Mountain and Boardman background data during worst case winter days is representative of the La Grande UGB for the following reasons:

1. Both sites are located in remote areas of Eastern Oregon within the same high desert climatology typical of La Grande. Neither site is influenced by urban sources.
2. Worst case winter day background measurements of 7 and 9 $\mu\text{g}/\text{m}^3$ measured at the Quartz Mountain and Boardman sites, respectively, are reasonable considering that windblown fugitive dust emissions are minimized by snow cover and that there are no wildfires or slash burning emissions during the winter months.

Annual Background Levels

On an annual basis, there is little difference between the background levels at Medford's Dodge Road site ($12 \mu\text{g}/\text{m}^3$), the Boardman site ($13 \mu\text{g}/\text{m}^3$) and the Quartz Mountain site ($13 \mu\text{g}/\text{m}^3$), supporting the assertion that none of the sites were being unduly impacted by nearby sources. This uniformity between background levels may also demonstrate that the annual distribution of the data is not being unduly biased by high winter worst case concentrations and that all of the sites are representative of regional background that also influences La Grande.

PM₁₀ monitoring at the Boardman and Quartz Mountain sites was based on size selective high volume samplers equipped with PM₁₀ inlets. Sampling was conducted at Quartz Mountain during the November, 1987 to November, 1988 period (108 observations) and at Boardman between December, 1983 and June, 1985 (64 observations). Both sites operated on a 6th day schedule.

The background air quality values used in the annual and 24-hour winter worst case control strategy calculations are $13 \mu\text{g}/\text{m}^3$ annual arithmetic average and $7 \mu\text{g}/\text{m}^3$ 24-hour average, respectively.

Aerosol Chemistry

La Grande PM₁₀ aerosol chemistry is unlike that of any other Oregon nonattainment area because of the large contribution from soil dust. On average, La Grande's PM₁₀ aerosol chemistry is 21% organic carbon (from smoke sources), 10% silicon and 2.9% aluminum (from soil dust). Other major components include calcium (1.6%) and iron (3.2%), both of which are of soil origin. Lead levels are very low (0.05%). During the winter months, the organic carbon concentration increases to as much as 50% of the aerosol mass

while during the summer months, the silicon content can increase to as much as 27% of the mass. Sulfate shows an average of $1.2 \pm 0.7 \mu\text{g}/\text{m}^3$. The balance is associated oxygen, hydrogen, water and ammonium. These data do not reflect source contributions to PM_{10} aerosol mass but are provided only to describe the chemical composition of the aerosol.

4.12.2 Nonattainment Area Analysis

This section describes the Department's analysis of PM_{10} air quality in La Grande as it is related to the National Ambient Air Quality Standards. Source contributions to the airshed's PM_{10} air quality are discussed both in terms of emission strengths and source contributions to air quality as measured at the Willow Street site.

4.12.2.1 Design Values Determination

Attainment of the annual NAAQS requires that a control strategy be adopted which will reduce ambient concentrations from the 1994 design value to below the NAAQS; specifically that the expected number of exceedances of the 24-hour NAAQS not exceed 150 $\mu\text{g}/\text{m}^3$ more than once per year, averaged over three years.

The EPA PM_{10} Development Guidelines specify that the preferred approach for estimating a design value is through the use of an applicable dispersion model corroborated by receptor models.¹² If there is no applicable dispersion model and at least one complete year of PM_{10} data is available, then the PM_{10} data should be used to estimate the design value. This is the case for La Grande.

EPA specifies that the annual design value should be calculated as the arithmetic average of 3 years of PM_{10} monitoring data and that the 24-hour design concentration should be estimated using the empirical frequency distribution for the largest available data base. Both the annual and 24-hour design concentrations must then be adjusted to compensate for emission changes that will occur as a result of emission growth and control strategy effects likely to occur by 1994, the year in which attainment must be demonstrated.

The current design values are based on PM_{10} data collected between December, 1987 and December, 1990. The information used to calculate design values is a composite of data collected over the

¹² PM_{10} SIP Development Guidelines. US Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, N.C. June, 1987. EPA-450/2-86-001.

year using two different PM₁₀ measurement methods in accordance with agreements reached with EPA Region X staff in December, 1989. As a result, a hierarchy of daily measurements has been used to build a composite data set. Reference method Medium-Vol. samples were selected first. If only integrating nephelometer scattering coefficient (Bscat) measurements were available, the winter season measurements (Nov. 15 to March 30) were adjusted to medium-vol. equivalent values based on linear regression analysis of paired observations. Based on 129 observations, an R-squared value of 0.89 was obtained. The regression equation is:

$$PM_{10} (\mu g/m^3) = Bscat * 14.7 + 8.0$$

This approach (1) greatly expands the database available for analysis; (2) provides a design value that is consistent with the measurement method that the Department will be using to determine NAAQS attainment and (3) assures that future receptor modeling analysis of PM₁₀ source contributions are consistent with control strategy design considerations. This approach is described further in Appendix 2.

Table 4.12.2-1: Design Values Summary

24-Hour Design Value, Graphical Procedure	190 $\mu g/m^3$
Annual Design Value	47 $\mu g/m^3$

The 24-hour design value determined by the graphical procedure provides the same result as the table lookup procedure.

4.12.2.2 Emission Inventory

Introduction

Emission inventories provide information on the relative strength of sources within an airshed and provide a basis for control strategy evaluation. In addition, emission inventories provide a basis for tracking emission reductions and growth. PM₁₀ emissions (usually expressed in tons of particulate per year or TPY) are calculated from emission factors and source activity records. Emission factors are the weight of pollutant emitted per unit weight of material processed such as grams of PM₁₀ emitted per pound of cordwood burned; pounds of road dust emitted per vehicle mile driven or pounds of particulate emitted per unit area of plywood veneer processed. Emission factors used in this analysis are principally from the Environmental Protection Agency's compilation of emission factors AP-42.¹³

¹³ Compilation of Emission Factors, U.S. Environmental Protection Agency AP-42 Fourth Edition and subsequent supplements. US EPA Office of Air Quality Planning and Standards. Research Triangle Park, N.C. 27711.

Source activity information on the amount of cordwood burned by residents, vehicle miles driven or veneer production volumes are obtained from a variety of sources including industrial air contaminant discharge permits, public mail surveys and data gathered from other government agencies. Estimation of seasonal or worst-case day PM₁₀ emissions requires development of a source operating schedule which describes the percent of annual emissions that occur during specific seasons, months or 24-hour periods.

Base Year Emission Inventory

PM₁₀ emissions for the 1986 base year within the Urban Growth Boundary (UGB) were estimated for industrial sources, residential heating (gas, oil and wood), commercial space heating, residential open burning, paved and unpaved road dust, construction, winter road sanding and industrial yard dust as well as transportation sources (cars and trucks). The basis of the emission estimates for the most significant sources are briefly described below. A detailed documentation of the emission inventory is found in the appendix:

Industrial Sources: 74 TPY PM₁₀. These emissions are from wood and agricultural product industries as well as institutional space heating sources. Three point sources are included in the inventory the largest of which emits 71 tons per year, or 97% of PM₁₀ point source inventory. The 1986 annual emissions are those that actually occurred during the year.

Residential Woodheating: 356 TPY PM₁₀. Information obtained from the Department's 1987-88 woodheating survey¹⁴ and the City of La Grande indicates that 4,458¹⁵ occupied housing units are located within the UGB and that 67% of the housing units use woodburning devices. Approximately 76% of the devices are woodstoves or fireplace inserts while the remainder are fireplaces. The survey indicates that, on average, residents burn 3.8 cords/year of firewood in their woodstoves and 2.7 cords/year in fireplaces. At 39.9 pounds of PM₁₀ emitted per ton of woodburned in a woodstove, 313 tons of PM₁₀ are emitted per year. Fireplace emissions at 26.6 pounds per ton of woodburned total 43 TPY for a total 356 tons per year.

¹⁴La Grande, Oregon Wood Heating Survey for 1987-1988 Heating Season. State of Oregon Department of Environmental Quality, Air Quality Division. 1988.

¹⁵City of La Grande Planning Department Correspondence.

Figure 4.12.1-1: La Grande PM₁₀ Spatial Distribution
 December 23 - December 27, 1985
 (5 Day Average, $\mu\text{g}/\text{m}^3$)

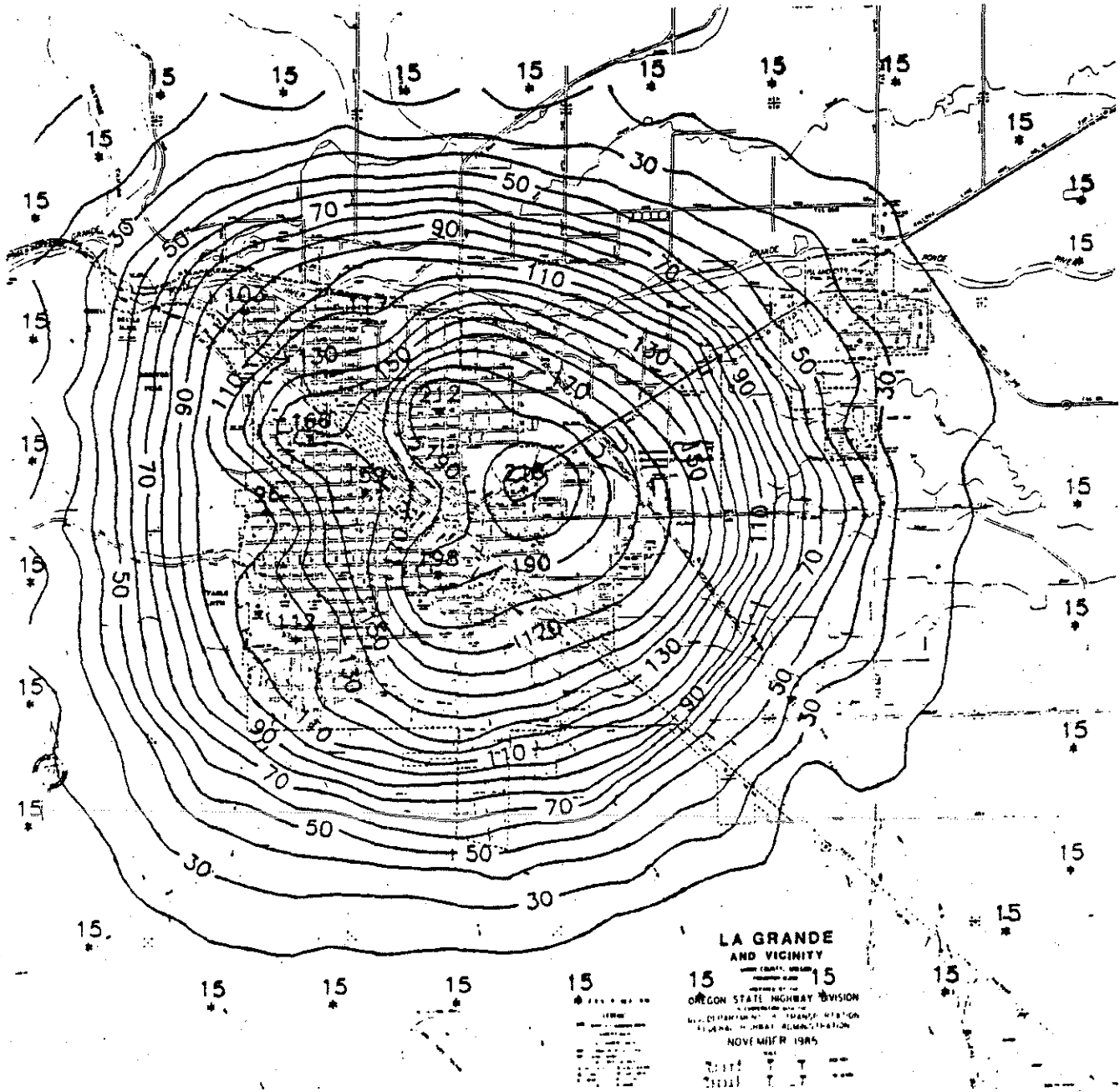
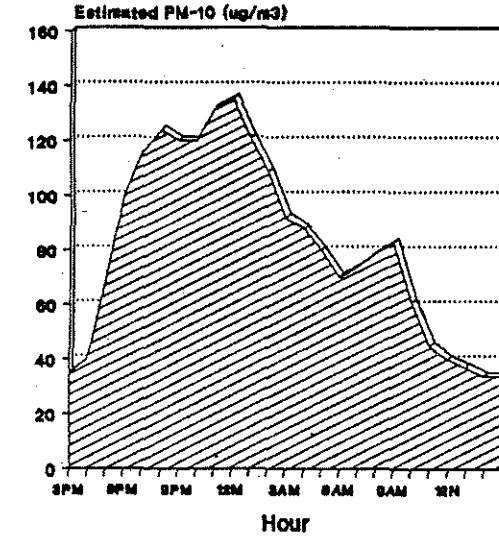


Figure 4.12.1-2: Diurnal & Seasonal Variations in PM₁₀ Levels

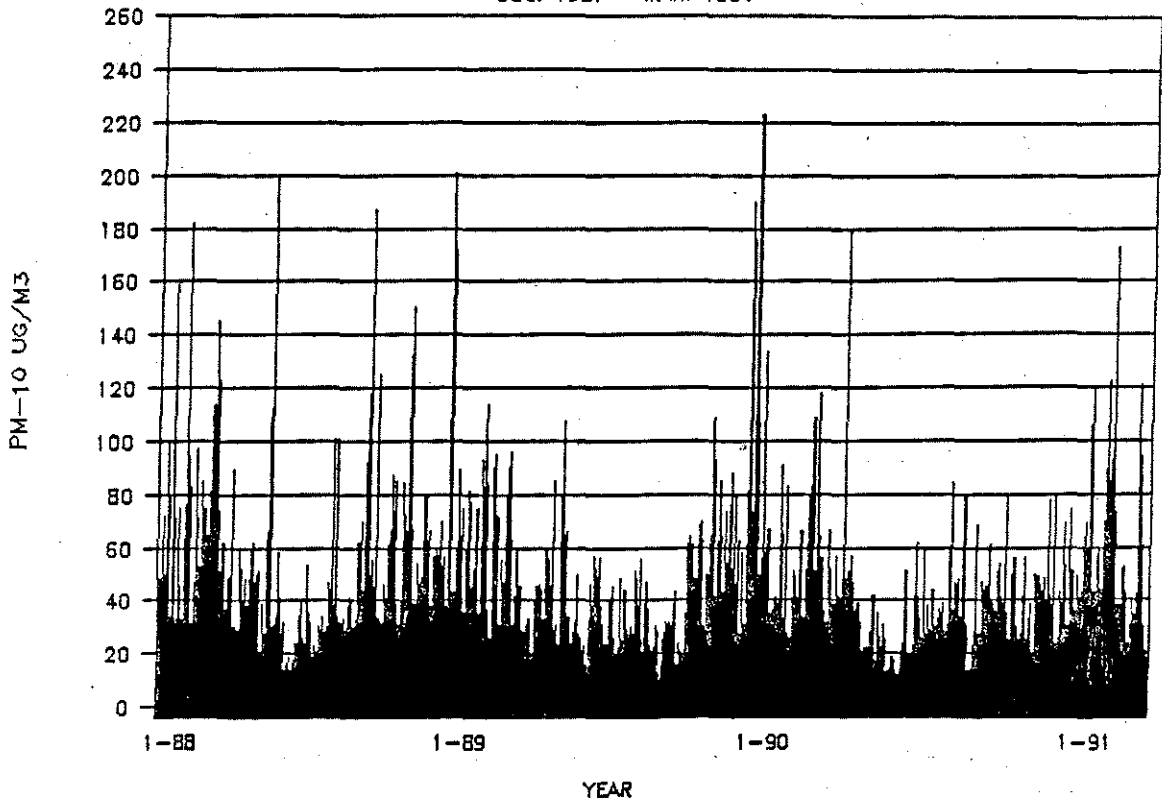
PM-10 Hourly Variations La Grande - Winter Season



December, 1989 Averages by Hour

LA GRANDE PM-10 LEVELS

DEC. 1987 - MAR. 1991



Based on the survey, about 14% of the woodstoves are DEQ-certified models. Forty percent of those surveyed indicated that wood was the main source of heat in their home. Wood is the only source of heat in 10% of La Grande homes.

Fugitive Dust Emissions: 301 TPY PM₁₀. The principal sources of dust within the UGB on an annual basis are paved road dust and the trackout of dirt onto paved roads (269 and 12 TPY, respectively). Emissions from industrial yards are the third largest source (8 TPY). Paved and unpaved road dust estimates are based on a 1985 estimate of 137,600 vehicles miles per day on paved roads. There are 32 miles of gravel road within the UGB and essentially no dirt roads. There are also a number of unpaved parking lots, residential driveways and local roads in the vicinity of the Willow Street sampling site.

Traffic entrainment of dust from road surfaces covered with winter road sanding material is also significant. Approximately 900 tons of 1/4" aggregate was used for road sanding during 1988, mostly on the south side of the City.

Other sources include fugitive dust generated by truck traffic on industrial yards (estimated at 8 tons per year), construction dust (4 tons per year) and emissions from raw materials storage and handling (2 tons per year).

Transportation Sources: 40 TPY PM₁₀. Highway vehicles (autos and trucks) emit 34 TPY PM₁₀ in tailpipe and tire wear particulate. Off highway vehicles emissions are estimated at 6 TPY.

Table 4.12.2-2 and Figure 4.12.2-1 summarize annual PM₁₀ emissions within the UGB.

Table 4.12.2-2: 1986 UGB Annual Emission Inventory

Source	Tons/Year PM ₁₀	Percent
Industry	74	9 %
Residential Woodburning	356	46 %
Commercial Space Heating	4	0 %
Solid Waste Disposal	2	0 %
Fugitive Dust	301	39 %
Transportation	40	5 %
Other Sources	5	0 %
Totals	782	100 %

24-Hour Worst Case Day Inventory

The development of an inventory representative of emissions during 24-hour periods, when PM₁₀ ambient air concentrations reach their highest levels, is important to understanding the sources that cause winter season episodes. The relative proportion of emissions during these periods is expected to be quite different than those reflected in the annual emission inventory because some sources (such as some dust sources) are suppressed by snow cover while others (such as residential woodheating) are much larger.

The 24-hour worst case inventory for the UGB is based on the following information and assumptions:

Industrial and Transportation Source. The 1986 worst case day of 0.21 tons/day (429 pounds/day) of industrial emissions are based on 1986 annual emissions increased by the ratio of the 1994 daily Plant Site Emission Limit (PSEL) (pounds/hour PSEL over 24-hours) to the 1994 annual PSEL emissions.

Residential Woodburning emissions are assumed to be proportional to the coolness of the weather as reflected in the degree heating days statistic tabulated by the National Weather Service. During the 1987-88 heating season (the coolest winter during the 1986-89 period) the coldest day (February 3rd) had 46 degree heating days. Since the total degree heating days for this period was 6,073. This represents 0.76% of the annual total or 2.7 tons (5,338 pounds/day) of PM₁₀ emission.

Winter Road Sanding emissions peak during periods when several inches of snow covers the area. During the winter months, from 800 to 1,000 tons of aggregate are spread on the roads each year within the UGB. Because snow often covers the roadways and landscape, most of the fugitive dust emissions are assumed to originate from road sanding. Chemical analysis of PM₁₀ samples collected on days exceeding the 24-hour NAAQS indicated that 40% (on average) of the PM₁₀ mass was soil dust. Therefore, on winter worst case days, the airshed road sanding emissions are expected to be of similar magnitude in the inventory of about 1,300 lbs/day. The worst case day emission estimates provide the basis for the annual emission estimate for road sanding.

Table 4.12.2-3: 24-Hour Worst Case Emission Inventory
1986 Base Year Period.

Source	Tons PM ₁₀	Percent
Industry	0.21	4.7 %
Residential Woodburning	2.70	58.1 %
Commercial Space Heating	0.03	0.6 %
Fugitive Dust	1.55	33.8 %
Transportation	0.10	2.5 %
Other Sources	0.00	0.0 %
Totals	4.59	100 %

Appendix 3 provides a detailed annual and worst case 24-hour emission inventory listing and documentation of the inventory.

Growth Factors

PM₁₀ emission growth factors are used to estimate future year emission inventories and source category impacts. Key indicators used to estimate emissions in 1994 include population growth, increases in transportation (vehicle miles traveled) and Plant Site Emission Limits (PSELs) for industrial sources.

Transportation Growth, estimated at 1.5% per year is used to estimate increases in vehicular and road dust emissions.¹⁶

Population Growth data indicate that the number of people living within the La Grande Urban Growth Boundary will increase by 1.1% per year from 37,000 to 39,500 by the year 1994.¹⁷ Population growth is used to proportionally increase residential open burning emission and woodstove use. The population growth rate used herein was estimated based on growth between the 1980 and 1990 census of 412 persons out of a base population of 113,600 (or about 0.4%).

Woodburning Emission Growth from woodstoves is expected to increase by 1% per year (6% total) by the year 1994 as a result of an increased amount of firewood burned; and fireplace emissions are expected to decrease by 2% per year. The one percent growth rate is based on energy projections and fuel cost modeling performed to estimate future woodburning emission growth in the

¹⁶State of Oregon Department of Transportation Highway Division Planning Section estimate. February 22, 1989.

¹⁷Oregon Department of Transportation

Pacific Northwest.¹⁸ These projections do not account for emission reductions that will occur as a result of woodstove certification programs as these reductions are explicitly accounted for in the Section 4.12.3.2, Evaluation of Potential Control Measures.

Industrial Emission Growth has been projected to increase to the maximum permitted within their current Plant Site Emission Limits (PSELS) for a total of 129 tons\year. The 24-hour worst case growth factor is calculated as the increase from the 1986 actual hourly emissions to their hourly maximum PSEL emission rate over a 24-hour period.

Projected Emissions, 1986 to 1994

The 1986 annual and 24-hour emissions in addition to design value estimates must be adjusted to account for emission growth or decreases that may occur within the airshed during the six year period of 1986-1994. Estimates are based on the emission growth factors described above. The information presented in Table 4.12.2-4 provides a basis for the future year source impact estimates (Section 4.12.3.1) which, in turn, provided the basis for the control strategy analysis.

Table 4.12.2-4: 1994 Estimated Emissions

Source Category	-Annual- 1994		-24-Hr Worst Case- 1994	
	Tons	%	Tons	%
Industry	129	16 %	0.6	13 %
Residential Woodburning	293	36 %	1.9	40 %
Fugitive Dust	310	38 %	1.6	34 %
Solid Waste Disposal	1	0 %	0.0	0 %
Transportation	45	6 %	0.1	2 %
Other	38	5 %	0.5	11 %
Totals	816	100 %	4.7	100 %

Projected Emissions Beyond 1994

Analysis of the ability of the attainment strategies to maintain the NAAQS during the period 1994 to the year 2000 requires development of a third set of emission estimates. The growth rates assumed for the maintenance analysis are based on the 1994 inventory adjusted to reflect the attainment strategy emission reductions:

¹⁸U.S. Environmental Protection Agency, Region X "Residential Wood Combustion Study, Task 3, Fuel Wood Use Projections", EPA 910/9-82-089 (1984).

- Population growth rate of 1% per year (a conservative assumption) for residential oil, gas and wood combustion emissions; solid waste incineration emissions and structural fires;
- Transportation growth rate of 1.5% per year for transportation sources and paved, unpaved, and construction dust as well as street sanding emissions;
- Industrial emissions are held constant at the annual and 24-hour PSEL emission rates shown in the 1994 emission inventory;

The projected residential wood combustion emissions, following application of a 1.1% per year growth rate, were adjusted to reflect emission reduction credits associated with the woodstove certification program. Information from the City of La Grande indicates that nearly 100% of the new woodstoves being installed in new construction homes are certified and 10% of these are pelletstoves.¹⁹ The 1991 Oregon Legislature's adoption of a statewide ban on the sale and installation of noncertified woodstoves assures that only certified stoves will be installed in new construction in the future. Additional information from manufacturers suggests that certified pelletstove sales should expand to a larger share of the market in future years. This may be, in part, supported by the fact that pelletstoves owners have not been asked to curtail burning during cordwood stove curtailment periods.²⁰ Therefore, during the period 1994 to 1996, it is assumed that 80% of newly installed stoves are cordwood and 20% are pelletstoves. During the period 1996 to 2000, it is assumed that 70% are cordwood and 30% are pelletstoves.

Actual and projected annual emissions during 1994 to the year 2000 are tabulated in Table 4.12.2-5. Projected 24-Hour Worst Case emissions are summarized in Table 4.12.2-6. Figure 4.12.2-2 shows changes in emission inventories during the period 1986 to the year 2000. The year 2000 annual projected emissions are expected to decrease by 15 tons per year (2%) while 24-hour worst case day emissions should decrease by about 200 pounds per day or about 2% through the implementation of the voluntary curtailment program, the woodstove certification program, the winter road sanding and fugitive dust emission control programs, open burning restrictions and other control strategy elements.

¹⁹Information from City of La Grande, June, 1991.

²⁰Personal communications with the Chairman, Association of Pellet Fuel Industries, Sparks, Nevada. February 22, 1990.

Table 4.12.2-5: 1994 to Year 2000 Annual Emissions
Tons Per Year

Source Category	1994	1996	1998	2000
Industry	129	129	129	129
Residential Woodburning	293	276	259	242
Fugitive Dust	310	319	329	338
Transportation	45	46	48	49
Other	38	40	40	42
Totals	815	810	805	800

Table 4.12.2-6: 1994 to Year 2000 24-Hour Worst Case Emissions
Pounds Per Day

Source Category	1994	1996	1998	2000
Industry	1200	1200	1200	1200
Residential Woodburning	3986	3803	3639	3483
Fugitive Dust	3282	3382	3483	3589
Transportation	259	267	275	283
Other	297	302	309	314
Totals	9024	8954	8906	8869

4.12.2.3 Source Contributions to PM₁₀

Development of strategies designed to attain and maintain the PM₁₀ NAAQS requires an accurate knowledge of contributions that sources make to the measured PM₁₀ aerosol mass. Two approaches are commonly used to estimate source contributions: (1) atmospheric dispersion modeling and (2) receptor model analysis based on the properties of the aerosol measured at the receptor.

The Environmental Protection Agency PM₁₀ SIP Development Guidelines Section 4.4 describes procedures to be used by the states for utilizing receptor models to estimate source contributions to PM₁₀ concentrations. These guidelines support the use of receptor models as an important element of the SIP strategy development process. Receptor modeling (specifically Chemical Mass Balance or CMB) is especially appropriate in La Grande where severe air stagnation and complex terrain conditions likely make dispersion modeling inappropriate. The specific application of the CMB Receptor Model to PM₁₀ source apportionment in Oregon's Group 1 areas is described elsewhere.²¹

²¹La Grande PM₁₀ Source Contributions: Chemical Mass Balance Analysis of PM₁₀ Source Contributions. State of Oregon Department of Environmental Quality, Air Quality Division. August, 1990.

Chemical Mass Balance (CMB) is a form of receptor modeling based upon regression analysis of aerosol features such as trace element concentrations. The model attempts to find the most likely combination of source contribution estimates (SCE's) by minimizing the difference between the measured and model-predicted concentration of aerosol features. Values for the ambient aerosol matrix are obtained through chemical analysis of PM₁₀ filters taken at the Willow Street sites, while the source "fingerprint" values are obtained through analysis of stack emissions. The CMB modeling protocol applied follows EPA guidance.²² All of the CMB modeling has been conducted using EPA's Version 7.0 CMB program.²³

Ambient Aerosol & Source Emission Analysis

Forty-three PM₁₀ samples from the Willow Street site have been chemically analyzed for CMB analysis. Seven of the samples exceeded 150 µg/m³ and were collected in January, May, October and December. The highest sample analyzed was 201 µg/m³ on December 16, 1988. Chemical characterization of the samples include 19 trace elements analyzed by x-ray fluorescence, 3 anions and elemental/organic carbon, providing a data set that is compatible with the source emission profiles. Analytical uncertainties for each value are routinely reported and included in the CMB calculations.

PM₁₀ source profiles representing all major emission groups within the airshed were used in the modeling. All of the profiles were obtained from the Pacific Northwest Source Profile Project.²⁴

²²Protocol for Reconciling Differences Among Receptor and Dispersion Models. US EPA 450/4-87-008. March, 1987.

²³Receptor Model Technical Series, Volume III (Revised): CMB User's Manual (Version 6.0) US EPA 450/4-83-014R. May, 1987.

²⁴Pacific Northwest Source Profile Library Project, Final Report Prepared by the State of Oregon Department of Environmental Quality, Air Quality Division. J. Core, editor. September, 1989.

**Receptor Model Source Contribution Estimates
24-Hour Exceedance Days**

Table 4.12.2-7 is a summary of the source contribution obtained for those samples that exceeded the 24-hour NAAQS during the winter months.

**Table 4.12.2-7: Average Winter Exceedance Day PM₁₀
Source Contribution Estimates**

Source	PM ₁₀ (μg/m ³)	% PM ₁₀
Soil Dust	68.0	39.0 %
Wood Smoke	106.0	58.0 %
Transportation	0.2	0.1 %
Sec. Aerosol	2.0	1.0 %
Others	3.0	2.0 %
	179.2	100 %

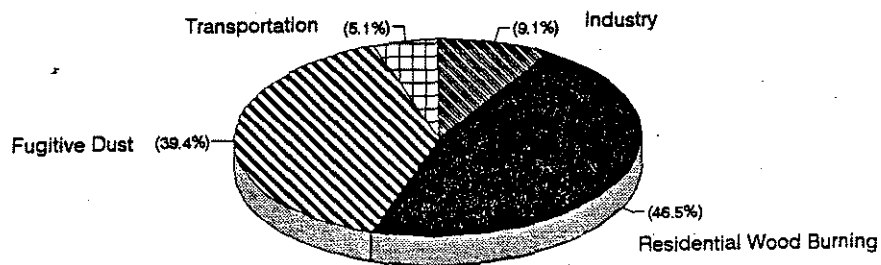
Other sources noted in Table 4.12.2-7 include water associated with the aerosol, though minor contributions and uncertainties in the apportionment are cause for some variation. Studies recently conducted in Los Angeles suggest that as much as 7% of the PM₁₀ mass is water.²⁵ No contribution from hogged fuel boilers was detected on these exceedance days. US EPA Chemical Mass Balance guidance specifies that the apportionment should account for at least 80% of the measured aerosol mass. Ninety-three percent of the mass has been apportioned in the above table. Average source contribution uncertainties (relative percent of mass) are 18% for wood smoke, 11% for hog fuel boilers and 8% for soil dust.

Annual Average Contributions

The annual average source contribution estimates noted in Table 4.12.2-8 were estimated from CMB analysis of PM₁₀ samples with mass loadings that approximate monthly average mass loadings. The average mass loading of the analyzed filters was 45 μg/m³ as compared to an actual annual arithmetic mean of 44 μg/m³ during the December, 1987 to March, 1989 period. Since the source contributions shown are based on a limited number of samples, the annual averages shown in Figure 4.12.2-3 are only approximations of the true annual source contributions.

²⁵S. Witz, R. Eden, C. Liu and M. Wadley, "Water Content of Collected Aerosols in the Los Angeles Basin," Presented at the Pacific Conference on Chemistry and Spectroscopy, Irvine, CA. October, 1987.

Figure 4.12.2-1: La Grande PM₁₀ Emission Inventories



(0% = Commercial Space Heating, Solid Waste Disposal, and Other Sources)

n = 782

Figure 4.12.2-2: 1986 to 2000 Emission Projections

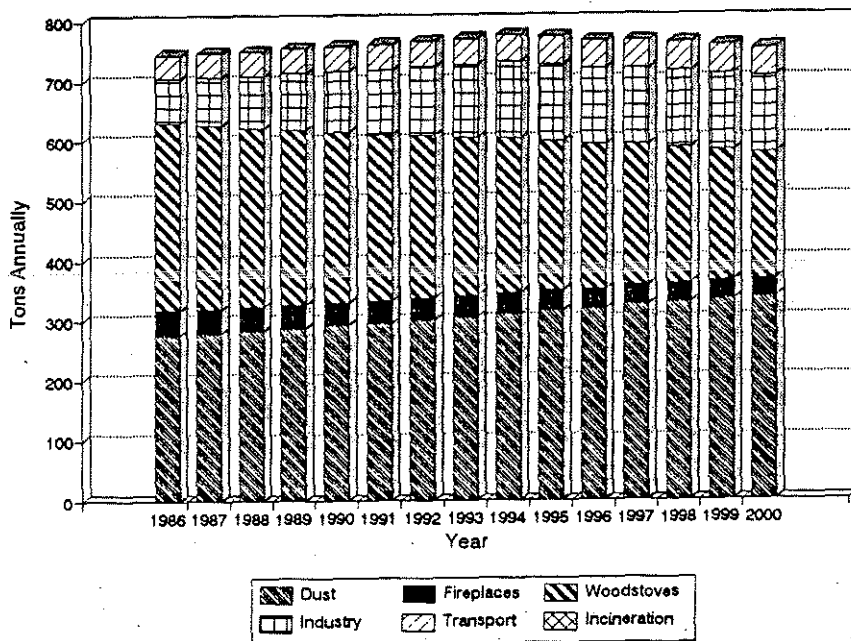


Table 4.12.2-8: Annual Average PM₁₀ SCE's

Source	PM ₁₀ (μg/m ³)	% PM ₁₀
Soil Dust	21	47 %
Wood Smoke	14	9 %
Burning *	4	31 %
Sec. Aerosol	2	4 %
Others	4	9 %
	45 μg/m ³	100 %

* Burning includes slash and field burning, land clearing and residential open burning.

Multiple Linear Regression Analysis

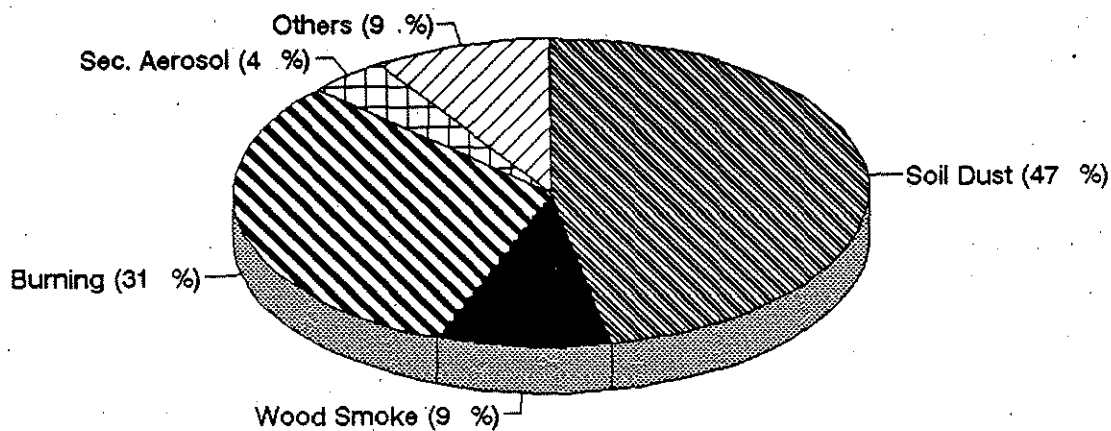
A second receptor modeling method of apportioning source contributions is multiple linear regression, wherein the source contributions are estimated from variability in the aerosol chemistry. The MLR analysis was completed to determine the degree to which PM₁₀ mass concentrations could be predicted from the aerosol chemistry, and as a second independent check on the CMB source apportionment. Based on 49 observations, 80% (R-Sq = 0.91) of the PM₁₀ mass variability can be accounted for on the basis of the silicon (a tracer for soil dust), sulfate (a secondary aerosol), organic carbon (from woodburning), lead (transportation sources) and sodium. Relative standard errors for the coefficients are 11%, 43%, 16%, 26% and 58%, respectively.

The results indicate that the PM₁₀ mass can reasonably be estimated from measurements of these five aerosol components. The remaining trace element components are not statistically significant in explaining variability in the PM₁₀ mass. The regression equation is:

$$PM_{10} = 4.7(Si) + 9.8(S) + 1.5(OC) + 878(PB) + 50.2(Na) - 24.5$$

Source apportionment based on MLR analysis was applied to annual average aerosol chemistry. Fifty three percent of the PM₁₀ mass is soil dust, 5% is sulfate and 38% is smoke from a variety of sources. These findings support the emission inventory and receptor modeling conclusions that soil dust and woodburning are significant contributors to La Grande PM₁₀ levels. Since industrial emissions cannot be identified by any single aerosol component, industry contributions cannot be reliably estimated using this approach. Multiple linear regression could not be applied to infer source contributions during exceedance periods because there are only 7 cases.

Figure 4.12.2-3: La Grande PM₁₀ Annual Source Contributions by Chemical Mass Balance



$n = 45 \text{ mg/m}^3$

Analysis of Impacts by Source Categories

Receptor modeling of samples collected on days exceeding the NAAQS clearly show that residential wood smoke is the predominant source, that wood smoke may account for as much as 78% of the PM₁₀ mass and that these impacts are consistent with the aerosol chemistry observed within the airshed. These findings are also generally consistent with diurnal and seasonal variations in La Grande PM₁₀ concentrations (Figure 4.12.1-2).

Comparisons between emission inventory and receptor modeling results have been used to provide a qualitative assessment of the relative significance of source categories. The source contribution estimates by these two methods for the winter 24-hour worst case and annual average periods are shown in Table 4.12.2-9. They illustrate the generally close agreement between the source categories. The wood products industry contributions as estimated by emission inventory are higher than that estimated by receptor modeling because dispersion of the emissions is not considered. Transportation emissions are also somewhat higher than indicated by receptor modeling.

Background PM₁₀ concentrations and sources are discussed above. The estimated contributions to the background are listed in Table 4.12.2-9.

Table 4.12.2-9: Background PM₁₀ Source Contributions

Source	Annual Ave. PM ₁₀ (μg/m ³)	24-Hr Ave. Exceedance Day
Soil Dust	3.9 30.6 %	4.3 62 %
Industry	0.6 4.5 %	0.0 0 %
Wood Smoke	6.2 48.0 %	1.9 27 %
Sec. Aerosol	1.2 9.3 %	0.6 8 %
Others	0.8 6.6 %	0.2 3 %
	12.7 μg/m ³	7.0 μg/m ³

Estimation of "Local" Air Quality Impacts

Estimation of the impact of emission sources within the UGB requires that background components listed in Table 4.12.2-9 be subtracted from the source contributions listed in Table 4.12.2-7 and 8. The difference between these two sets of estimates is the contribution of "local" sources identified in the emission inventories. Table 4.12.2-10 and 11 lists the "local" source contribution estimates (SCEs) to PM₁₀ mass average winter days which exceed the NAAQS and annual PM₁₀ mass loading, respectively.

Table 4.12.2-10: Average Exceedance Day "Local" PM₁₀ SCE's

Source	PM ₁₀ (μg/m ³)	% PM ₁₀	Emission Inventory
Soil Dust	64.0	37.6 %	34 %
Industry	0.0	0.0 %	5 %
Wood Smoke	104.0	61.2 %	58 %
Sec. Aerosol	0.6	0.3 %	----
Others	2.0	1.1 %	4 %
	170 μg/m ³	100.0 %	100 %

Table 4.12.2-11: Annual Average "Local" PM₁₀ SCE's

Source	PM ₁₀ (μg/m ³)	% PM ₁₀	Emission Inventory
Soil Dust	17.1	53.4 %	38 %
Industry	0.0	0.0 %	9 %
Wood Smoke	11.8	36.8 %	46 % **
Sec. Aerosol	0.8	2.5 %	-----
Others	2.3	7.1 %	6 %
	32 μg/m ³	100.0	100 %

Table 4.12.2-11 Notes:

** Includes residential woodburning and solid waste disposal open burning.

The above analysis demonstrates that the 1986 emission inventory and receptor modeling analysis results are reasonably comparable. The validated emission inventories support the use of the 1994 emission inventory projection as the basis for the emission rollback calculations used in the attainment demonstration.

4.12.3 Emission Reduction Analysis

This section describes the emission reductions necessary to attain the NAAQS (4.12.3.1), a review of potential control measures that may be applied in La Grande (4.12.3.2), and a demonstration of the adequacy of the control measures to attain and maintain the NAAQS within the time limits specified by Section 110 (a) of the Clean Air Act (4.12.3.3). Emission Offsets and Emergency Action Plans are described in Sections 4.12.3.4 and 3.5.

4.12.3.1 Emission Reduction Necessary for Attainment

The EPA PM₁₀ SIP Development Guidelines specify that a proportional model can be used to estimate the control strategy requirements of the SIP. In the analysis below, the contribution of emission sources to the 1994 design values have been apportioned based on the 1994 annual and 24-hour worst case emission inventory estimates. Emission growth rates between 1986 and 1994 were first applied to each emission inventory source category. The sum of the 1994 source impacts plus background provide the 1994 24-hour worst case design value. A similar approach is taken to estimate 1994 annual emission reduction requirements.

Projected 24-Hour Source Impacts in 1994

Table 4.12.3-1 lists 1994 source contribution estimates for the 24-hour worst case scenario. Source contributions at the 1994 design level were apportioned using the 1986 24-hour worst case day emission inventory percentages applied to the "local" PM₁₀ air quality level of 183 $\mu\text{g}/\text{m}^3$ (190 $\mu\text{g}/\text{m}^3$ design value less the 7 $\mu\text{g}/\text{m}^3$ background).

**Table 4.12.3-1: Projected Future Source Category Impacts
(24-Hr Worst Case)**

Source	1986 Worst Day EI	"Local" Design ($\mu\text{g}/\text{m}^3$)	1986-94 Growth (%)	1994 $\mu\text{g}/\text{m}^3$	1994 % "Local" PM ₁₀
Woodstoves	51 %	93.5	-26.8 %	68	40.0 %
Fireplaces	7 %	12.8	-16.7 %	11	6.2 %
Industry	5 %	8.5	179.7 %	24	14.0 %
Fugitive Dust	32 %	58.1	3.3 %	60	35.0 %
Transportation	3 %	4.6	12.6 %	5	3.0 %
Other Sources	3 %	5.4	-42.9 %	3	1.8 %
Subtotals		182.9		171 $\mu\text{g}/\text{m}^3$	
Background				7 $\mu\text{g}/\text{m}^3$	
Total			178 $\mu\text{g}/\text{m}^3$		

Air quality improvement needed = 28 $\mu\text{g}/\text{m}^3$ (178-150 $\mu\text{g}/\text{m}^3$)
or a 16.4% (28/171) reduction in worst case day emissions
equivalent to 1,447 pounds per day.

The control strategy must be comprised of a mix of individual source reduction measures such that the sum of the reductions equal or exceed the total reduction requirement. Adopted control strategies must be shown through a demonstration of attainment (Section 4.12.3.3) to attain and maintain the NAAQS by reducing emissions such that an overall reduction in PM₁₀ 24-hour worst case concentrations is at least 28 $\mu\text{g}/\text{m}^3$.

Projected Annual Source Impacts in 1994.

Table 4.12.3-2 lists 1994 source contribution estimates for the annual scenario. Source contributions at the 1994 annual design level were apportioned using the 1994 annual emission inventory percentages applied to the "local" PM₁₀ air quality level of 34 $\mu\text{g}/\text{m}^3$ (47 $\mu\text{g}/\text{m}^3$ design value less the 13 $\mu\text{g}/\text{m}^3$ background).

Table 4.12.3-2: Projected Annual Source Category Impacts

Source	1986 Annual EI	"Local" Design ($\mu\text{g}/\text{m}^3$)	1986-94 Annual Growth	1994 Annual $\mu\text{g}/\text{m}^3$	1994 % "Local" PM ₁₀
Woodstoves	40 %	13.6	-27 %	10.0	29 %
Fireplaces	5 %	1.9	-17 %	1.6	4 %
Industry	9 %	3.2	74 %	5.6	16 %
Fugitive Dust	35 %	12.0	21 %	13.5	39 %
Transportation	5 %	1.7	13 %	1.6	6 %
Open Burning	0 %	0.0	8 %	0.0	0 %
Other Sources	4 %	1.5	8 %	1.6	5 %
Subtotals		33.9		33.9 $\mu\text{g}/\text{m}^3$	
Background				13 $\mu\text{g}/\text{m}^3$	
Total				47 $\mu\text{g}/\text{m}^3$	

No air quality improvement is needed on an annual average basis since the NAAQS is attained in both the 1986 base year and in 1994.

4.12.3.2 Evaluation of Potential Control Measures

The base PM₁₀ attainment control strategy for La Grande includes the following elements:

Woodburning Controls:

1. A voluntary woodburning curtailment program designed to achieve a 30% compliance rate (low income, sole source persons exempted). The program includes surveys to determine the effectiveness of the program;
2. A ban on the sale of and installation of used noncertified woodstoves;
3. EPA\DEQ woodstove certification program;
4. Woodburning public education program;
5. Voluntary fuel wood seasoning program;
6. Home weatherization and woodstove replacement program for low income homeowners funded at \$325,000 in Community Block Grant Funds during the 1991-1992 period;

Fugitive Dust Controls:

1. Winter road sanding emissions reduced by 10%;
2. Control of highway right-of-way trackout through Oregon Department of Transportation administrative rules;
3. Stabilization of dust on unpaved gravel roads;
4. Paving of gravel streets;

5. Phase-out of unpaved roads, parking lots and staging areas;
6. Requirements for dust control plans for construction, land clearing or material storage piles;
7. Paving of commercial developments;
8. Curbing of new paved streets;
9. Stabilization of unpaved areas using chemical palliative.

Open Burning Controls:

1. Prohibition on residential open burning on curtailment days;
2. Voluntary forestry smoke management program on forest lands within approximately 25 miles of the nonattainment area;
3. Mandatory agricultural smoke management program;

Industrial Controls:

Industrial RACT measures are not required in the attainment strategy since industrial emission reductions are not necessary to demonstrate attainment with the NAAQS.

The contingency measures to be implemented upon failure to attain the Air Quality Standard by Dec. 31, 1994 include:

Residential Wood Combustion:

1. Mandatory woodheating curtailment program designed to achieve at least a 30% compliance rate;
2. State backup authority from 1991 Legislature to require removal of noncertified woodstoves upon sale of a home;
3. Backup authority from 1991 Legislature to the DEQ to adopt mandatory curtailment programs in the event that local governments fail to adopt\implement or enforce local ordinances;

In addition, a mandatory forestry smoke management program is under discussion with the Oregon Department of Forestry as is the establishment of a Special Protection Zone within approximately 25 miles of the nonattainment area. Special protection zone restrictions during the winter months may be required.

PM₁₀ Control Strategy Elements

The control strategy elements referred to above have been set in place to assure attainment of the 24-hour PM₁₀ NAAQS and continued maintenance of the annual NAAQS. Emission reduction credits associated with each element are listed and discussed. A PM₁₀ emission reduction credit is a measure of the reduction in PM₁₀ emissions that would be accomplished through adoption and implementation of the program element. The strategy elements and credits are further described in Section 4.12.3.3.

Table 4.12.3-3 PM₁₀ Control Strategy Elements

Element	Emission Reduction Credits by 1994
Attainment Strategies	
1	Woodstove Certification Program 29%
2	Voluntary Woodburning Curtailment Program 30%
3	Public Education Programs No Credit Taken
4	Winter Road Sanding Control Program 10%
5	Other Fugitive Dust Strategies No Credit Taken
6	Other Woodburning RACM Strategies No Credit Taken
7	Forestry & Agricultural Smoke Management Programs No Credit Taken

Residential Wood Smoke Control Elements

There are two basic approaches to reducing woodsmoke from stoves and fireplaces: (1) improving the performance of the woodheating systems such as through a certified woodstove program; and (2) burning less wood through woodstove curtailment programs. Some strategies have multiple advantages. Certified woodstoves, for example, improve emission performance by reducing the amount of woodsmoke per cord of woodburned while improving energy efficiency, thus reducing the amount of wood burned. Other examples include well designed public information, energy conservation, or firewood seasoning programs that result in better combustion (lower emissions) and better energy efficiency (less fuel burned). The key elements of the residential wood smoke control program are described below.

The Woodstove Certification Program

In 1983, the Oregon Legislature directed the Department to require that all new woodstoves sold in the State be laboratory tested for emissions and efficiency to assure compliance with established woodstove emission standards. As a result, stoves sold after July, 1986 were required to emit 50% less emissions than conventional woodstoves. After July 1988 new woodstoves were required to emit 70% less emissions.

Subsequent to the adoption of Oregon's emission standards, the Environmental Protection Agency adopted a slightly more restrictive national certification program which will become effective in July, 1990. In March, 1990, the Department completed rule making to modify the Oregon Woodstove Certification Rules (OAR 340 Division 34) to assure consistency with EPA's national program.

In-home studies of first generation certified woodstoves have indicated that they actually reduce emissions by about 30%.

Second generation certified woodstoves have been shown to reduce emissions by about 50%. Their depressed performance has to a large extent been due to durability problems with critical stove components. The majority of the stoves certified by the Department and sold in Oregon have been second generation stoves.

Second generation catalytic stove designs have incorporated new advancements in combustor technology which in part accounts for the stove's increased effectiveness. First generation catalytic stoves incorporated less effective catalytic elements, which are currently reaching the end of their useful life. When replaced with new generation catalysts, the first generation catalytic stoves will provide effective emission reductions approaching that of second generation stoves. These improved first generation stoves will be a significant part of the stove population in 1994.

Recent in-home studies have also shown that woodstove designs which met experimental durability criteria have demonstrated emission reductions averaging 79%. Durability criteria are those design features and methods of construction which will help ensure that the initial emission performance achieved by a stove is maintained over its usable life. Some of these units will also make up the woodstove population in 1994.

Additionally, sales of pelletstoves in nonattainment areas, as well as statewide, are reported to have significantly increased and are expected to accelerate in the foreseeable future. Pelletstoves provide a 90% reduction in emissions and are expected to become a significant segment of the woodstove population in nonattainment areas where they have typically been exempted from curtailment programs. Therefore, the Department is using a 50% emission reduction credit overall for the stove population of 1994.

RESIDENTIAL WOODBURNING

WOODSTOVES:

Residential woodstove emissions are 33% (313 tons per year) of the 1986 baseline PM₁₀ emission inventory. The growth of residential woodstove use was estimated by comparing a study of projected firewood use, conducted by Del Green Associates, and actual woodheating surveys conducted by the Department from 1981 through 1987. The Del Green projections can be used to estimate wood use growth from 1986 to 1994 at a 1% per year increase. This projection is conservative compared to the actual firewood use trends projected from the 1981 and 1987 woodheating surveys.

FIREPLACES:

Fireplace emissions in La Grande represent 5% (43 tons per year) of the 1986 PM₁₀ baseline emission inventory. The emissions from fireplaces have been separated from woodstove use in calculating the emission reduction benefit derived from the woodstove certification program. The Del Green projections for wood use trends in fireplaces estimates a 2% per year decrease in fireplace use from 1986 through 1994. This estimate is also conservative when compared to the actual firewood use trends for fireplaces from the 1981 and 1987 woodheating surveys.

PELLETSTOVES:

Residential pelletstoves are included as part of the 1986 baseline woodstove emission inventory and are expected to grow at an accelerated rate in the near future. A conservative estimate of pelletstove growth is to assume a growth rate equivalent to cordwood stoves.

The following calculations are included in Appendix 8.

RESIDENTIAL WOODSTOVES

Basis for a 29.2% Woodstove Certification Program Credit

As noted above, firewood use in residential woodstoves is projected to increase by 1% per year over the 9 year period from 1986 to December, 1994. This is the basis of the growth factor used in calculating projected 1994 wood smoke emissions. Therefore, in the absence of any certification program, emissions would increase by:

$$1\% \text{ per year} \times 9 \text{ years} = + 9\%$$

Building permit authorities in La Grande indicate that essentially all permitted installations are certified stoves and that about 10% of these are pelletstoves. A 5% per year replacement rate for removal of conventional stoves and installation of certified stoves is also assumed.

(1) For new certified cordwood stoves emitting 50% of conventional stoves, emissions would be expected to decrease over the period 1986-1994 by :

(a) Assuming 90% are new or replacement cordwood stoves:

$$90\% \times \{ [9\% \times (100\% - 50\%)] \times \text{BL86} + [5\%/Yr. \times 9 \text{ Yrs} \times (100 - 50\%)] \times \text{BL86} \} = 24.3\% (\text{BL86}) [\text{tons}]$$

Where BL86 = Baseline emissions in 1986 (tons per year)

(2) For new certified pelletstoves emitting 10% of conventional stoves, emissions would be expected to decrease over the period 1986-1994 by :

(a) Assuming 10% are new or replacement pelletstoves:

$$10\% \times \{ [9\% \times (100\% - 10\%)] \times \text{BL86} + [5\%/\text{Yr.} \times 9 \text{ Yrs} \times (100 - 10\%)] \times \text{BL86} \} = 4.9\% (\text{BL86}) [\text{tons}]$$

(3) The total emission reduction as a function of the 1994 uncontrolled woodstove emissions is:

$$\frac{\{24.3(\text{BL86}) + 4.9(\text{BL86})\} / \text{BL94} = \frac{29.2(\text{BL86})}{1.09(\text{BL86})} = 26.8\%$$

Where: $\text{BL94} = 1.09 \times \text{BL86}$

Therefore, the woodstove certification program alone provides a 26.8% credit by 1994.

RESIDENTIAL FIREPLACE EMISSION PROJECTION

Emissions from residential fireplaces are expected to decrease 2% per year from 1986 to 1994.

NET BENEFIT OF CERTIFICATION PROGRAM AND FIREPLACE TRENDS

Woodstove and Pelletstove Replacement:

Assuming 90% of replacement stoves will be certified cordwood stoves, and 10% pelletstoves; the net emission reduction from the 1986 base line will be 8.4 tons per year. This yearly reduction is applied consistently (not compounded) each year from 1986 to 1994. The woodstove and pelletstove replacement credit is calculated as follows:

$$[90\% \times (5\%/\text{yr} \times .5)] + [10\% \times (5\%/\text{yr} \times .9)] = 2.7\% / \text{yr} \text{ reduction.}$$

$$1986 \text{ woodstove baseline } [313] \times .027 = 8.4 \text{ tons/yr.}$$

New Woodstoves and New Pelletstoves:

Assuming 90% of new certified stoves will be cordwood stoves, and 10% to be pelletstoves; the net emission increase due to growth will be 4.5 tons/yr. This yearly increase is applied consistently (not compounded) from 1986 to 1994. The credit is calculated as follows:

$[90\% \times (1\%/yr \times .5)] + [10\% \times (1\%/yr \times .1)] = 0.46\%/yr \text{ increase.}$

1986 woodstove baseline $[313] \times .0046 = 1.4 \text{ tons/yr.}$

Residential Fireplace Trend:

Residential fireplace use is projected to decrease by 2% each year. This means a constant reduction of 0.9 tons per year, (not compounded) from the 1986 fireplace emission baseline, calculated as follows:

$$[43 \text{ tons/yr} \times .02] = 0.9 \text{ tons/yr.}$$

The following table summarizes the expected trends in emissions from woodburning devices:

Table 4.12.3-4: Emission Trends for Woodburning Devices

Source Category	ANNUAL EMISSIONS BY YEAR (Tons)						
	1986	1987	1988	1989	1990	1991	1994
Existing Stoves	313	305	296	288	279	271	246
New Stoves	0	1	3	4	6	7	11
Old & New Fireplaces	43	42	41	40	39	39	36
TOTAL	356	348	340	332	324	317	293

The net reduction due to the woodstove certification program and fireplace usage trends (from the projected 1994 uncontrolled residential wood combustion emissions of 396 tons) becomes 22%:

$$1 - \frac{[1994 \text{ controlled}] \ 293 \text{ tons}}{[1992 \text{ uncontrolled}] \ 376 \text{ tons}} = 22.1 \% \text{ Reduction}$$

Maintenance Credits Beyond 1994

The credits claimed for the certification program beyond 1994 follow the same approach but are based on the fact that pelletstoves are likely to be an increasing proportion of the new stoves being installed. During the period 1994-1996, an 80%/20% cordwood/pelletstove mix is assumed increasing to a 70%/30% mix during the period 1996 to year 2000. Growth in new

stoves is expected to increase to 1.1% per year, reflecting the projected population growth rate.

Stove replacement is expected to remain 5% per year, and fireplace use trends will continue at a 2.0% per year reduction. The calculated net benefits adjusted for emission growth provide a 17 ton reduction during the 1995-96 period, and an additional 26 ton reduction during the period of 1997 to 2000.

Maintenance Period 1994 through 1996

Replacement: Woodstoves and Pelletstoves

$$[80\% \times (5\%/yr \times .5)] + [20\% \times (5\%/yr \times .9)] = 2.9\%/yr$$

$$BL1994 [246 \text{ tons}] \times .029/yr = 7.1 \text{ ton/yr reduction.}$$

New: Woodstoves and Pelletstoves

$$[80\% \times (1.1\%/yr \times .5)] + [20\% \times (1.1\% \times .1)] = 0.46\%/yr$$

$$BL1994 [11 \text{ tons}] \times .0046/yr = 0.05 \text{ tons/yr increase.}$$

Fireplace: continue at -2%/yr. from the 1994BL[36 tons] x .02/yr] = 0.7 tons/yr decrease.

The following table summarizes the expected trend in emissions from woodburning devices:

Table 4.12.3-5: Emission Trends in Woodburning, 1994-96

	1994	1995	1996
Existing Stoves	246	237	229
New Stoves	11	12	13
Fireplaces	36	35	34
TOTAL	293	284	276

Net Emission Benefit for 1994 - 1996:

$$[293 - 276] = 17 \text{ ton reduction}$$

Maintenance Period 1996 through 2000

Replacement: Woodstoves and Pelletstoves

$$[50\% \times (5\%/yr \times .5)] + [50\% \times (5\%/yr \times .9)] = 3.5\%/yr$$

$$BL1996 [229 \text{ tons}] \times .035/yr = 8.0 \text{ ton/yr reduction.}$$

New: Woodstoves and Pelletstoves

$$[50\% \times (1.1\%/yr \times .5)] + [50\% \times (1.1\% \times .1)] = 0.33\%/yr$$

$$BL1996 [13 \text{ tons}] \times .0033/yr = 0.04 \text{ ton/yr increase.}$$

Fireplace: continues at -2%/yr. from the 1996BL [34] x .02/yr = 0.7 tons/yr decrease.

Table 4.12.3-6: Emission Trends in Woodburning, 1996-2000

	1996	1997	1998	1999	2000
Existing Stoves	229	220	212	203	195
New Stoves	13	14	15	16	17
Fireplaces	34	33	32	32	31
TOTAL	276	267	259	251	243

Net Emission Benefit for 1996 - 2000:

$$[276 - 242] = 34 \text{ ton reduction.}$$

The City of La Grande's Air Quality Program

By resolution (No. 4122, Series 1991) adopted August 7, 1991, the La Grande City Council established La Grande's Air Quality Improvement Program under the direction of the City Community Development Department. The program was established to implement the La Grande Air Quality Program. The program is funded by the City at a level of approximately \$15,000 per year. Additional special project funds are provided by the Department to support major capital outlay and other one-time program needs. The Department also provides air quality and meteorological monitoring support. The City's Air Quality Program is found in Appendix 4. Key elements of the program are described below.

1. Public Information Programs.

A comprehensive public information program is essential for public cooperation and support in reducing woodsmoke emissions. The program describes the need for the public's cooperation, the health-safety-energy-economic benefits to individuals and the community, and precisely what individuals can do to help.

Periodic in-field surveys will be conducted as a means of assessing the effectiveness of the voluntary curtailment program. If such surveys indicate that less than 30% of the public is following the curtailment advisories, the City of La Grande will adjust the public education program to increase the compliance rate.

The La Grande education program fulfills all of these criteria. Key elements of the will program include:

- Operation of the La Grande Woodburning Advisory telephone system to advise the public on the daily status of the voluntary curtailment program;
- News media involvement to include some or all of the following: radio and television public service announcements, press releases, interviews, news reports, photographs and advertisements;
- Printed materials describing La Grande's air quality problem, health effects and actions the public can take help solve the problem;
- Printed materials on woodstove sizing and stove safety, how to purchase a certified woodstove, fuel wood seasoning and how to reduce stove opacity;
- Public forums on health effects of woodsmoke and air quality hosted by local civic groups;

Additional elements that may be included, resources permitting, are:

- Newspaper articles on clean air issues, Air Pollution Index (API) trends and woodburning curtailment calls;
- "Good Neighbor" woodburning packets distributed to households observed burning on "Yellow" or "Red" curtailment days;
- Promotion of displays explaining air quality conditions in La Grande and proper woodstove operation during community events;

- Coordination with advisory committees, woodstove dealers environmental and governmental groups;
- Formation of a "Speakers Bureau" to inform local groups on the nature of the problem and need for public involvement and an in-school fire safety education program.
- A voluntary fuel wood moisture measurement program may be established by the City of La Grande to provide a means for homeowners to determine if the wood is seasoned.

EPA's Guidance Document for Residential Wood Combustion Emission Control Measures recognizes public education programs as an essential element of any residential woodburning control strategy. The highest level education program described by EPA is based on a comprehensive, aggressive program that includes most of the elements found in the La Grande program. Although EPA recognizes public education programs as an essential element of woodburning control programs, no emission reduction credits can be assigned to the program without further technical justification.²⁶

2. Home Weatherization and Stove Replacement Program

In June of 1991, the City of La Grande received a \$325,000 grant from the State of Oregon Community Block Grant program for a home weatherization and woodstove replacement program similar to the Medford CLEAR and Klamath Falls PURE Projects. Approximately 100 low income homes will be weatherized and conventional woodstoves replaced by natural gas, electrical furnaces or pelletstoves with these grant funds. Award of the funds will decrease the number of households exempt from the voluntary curtailment program. Additional funding would eliminate other exemptions to the curtailment program.

3. Curtailment During Poor Ventilation Episodes

A Voluntary Woodburning Curtailment Program is a key element of the attainment strategy. The strategy has been designed to limit the use of woodstoves and fireplaces during periods likely to exceed the 24-hour NAAQS. Woodburning curtailment forecasts are made once daily at 3 PM during the woodheating season by the Community Development Department. The forecasts are made daily between November 1st and March 1st.

²⁶US EPA, "Guidance Document for Residential Wood Combustion Emission Control Measures," EPA-450/2-89-015 (1989).

A "Yellow" forecast is issued if the 3 PM to 3 PM 24-hour levels of PM₁₀ are forecast to be between 50 and 95 $\mu\text{g}/\text{m}^3$.²⁷ A "Red" forecast is issued if the forecast is for PM₁₀ levels to be greater than 95 $\mu\text{g}/\text{m}^3$. The curtailment calls are based on criteria provided by the Department, and are based on a forecast algorithm using National Weather Service and barometric pressure data, forecasts of synoptic meteorology, surface temperatures and wind speed/direction. Nephelometer measurements of hourly light scattering and local observations of air quality conditions are also used. A detailed discussion of the curtailment methodology is found in Appendix 7.

Woodburning curtailment advisories are issued at three levels:

"Green" advisories are issued for periods during which NAAQS violations are unlikely. Woodburning is unrestricted during these periods but the public is asked to follow good woodburning practices.

"Yellow" advisories are issued for periods approaching exceedance of the NAAQS. Under a "Yellow" curtailment, the public is asked to curtail all unnecessary woodburning, excepting only pelletstoves, certified woodstoves and those that use wood as their sole source of heat.

"Red" advisories are issued for periods of severely restricted ventilation during which PM₁₀ levels are expected to exceed the NAAQS. Only households in which woodburning is the sole source of heat are permitted to burn during these periods.

The Department estimates that approximately 10 to 20 curtailment days ("red" and "yellow") can be expected during the space heating season.

Compliance with the advisories is determined through surveys of woodburning activity during "Green," "Yellow" and "Red" curtailment periods.

²⁷Bscat measured by integrating nephelometer in units of 10^{-4} M^{-1} .

Long-Term Woodheating Control Strategy

Woodheating curtailment is viewed as a short-range control strategy to allow rapid attainment of the short-term (24-hour) PM₁₀ air quality standard. The Department of Environmental Quality and the City of La Grande are committed to pursuing permanent reductions in woodheating emissions as a long-range strategy to reduce and even eliminate the reliance on the curtailment program.

At least the following measures will be pursued to reduce permanently woodheating emissions:

- o The 1991 Oregon Legislature adopted a new statute (HB2175) prohibiting the commercial sale of noncertified woodstoves and requiring the removal of conventional woodstoves upon sale of a home. Stove removal upon sale has been reserved as a contingency measure to be implemented in the event that the attainment strategy fails to achieve the NAAQS. Both measures greatly accelerate the woodstove changeover rate.
- o Public education activities will include more specific information on the cost of woodheating in relation to other alternative cleaner heating sources. The major goal of this effort is to inform home owners of the cost of heating with wood compared to other fuels (such as natural gas). These cost comparisons may result in conversion away from woodheat.
- o Information and studies on the toxicity, health effects and other detrimental effects of woodsmoke will be provided to the public in a continuing effort to make people aware of the woodsmoke problem.
- o In-home emission control performance of certified stoves will be improved through promotion of durable design criteria and development of a stress test which will aid in identifying durable certified stoves.
- o Financial incentive programs will continue to be pursued through the Community Block Grant Program, the Oregon Legislature and other avenues to weatherize and promote replacement of noncertified woodheating appliances in low income homes with less polluting systems.

Basis for Voluntary Curtailment Program Credit

The goal of the La Grande Woodburning Advisory Program is to reduce PM₁₀ emissions from woodburning by at least 30% on the days violations of the PM₁₀ health standard could occur. The La Grande compliance rate is expected to be similar to that reported for other voluntary curtailment programs. The first four years of the Medford, Oregon program gained a 25% compliance rate while the first and second years of the Klamath Falls, Oregon voluntary program had compliance rates of 25% and 45%, respectively. The Missoula, Montana voluntary curtailment program achieved a compliance rate of 30%. The City's woodburning surveillance program will provide on-going assessments of the program's compliance rate. This information will be used to determine the changes that may be needed to improve the program.

Since La Grande is in attainment with the annual NAAQS, annual emission reduction credits are not required.

State of Oregon Statute

The 1991 Oregon Legislature passed several measures in HB2175 which will be available as either as control strategies or contingency measures for the control of PM₁₀ emission from residential woodheating. These measures are outlined below:

Residential Woodheating Controls

- I. WOODSTOVE CHANGEOUT PROGRAM (OAR 340 Division 34)
 - A. The Residential Woodheating Air Quality Improvement Fund created under Section 10 of HB2175 provides for a two faceted program that offers both low, or no interest loans, as well as total subsidies for the replacement of noncertified woodstoves with alternate heat sources. The low/no interest loan program, available to woodheating households within the western interior valleys or any PM₁₀ nonattainment area, provides criteria under which a noncertified stove may be removed and destroyed, and a high efficiency, low polluting heating system installed to building code and manufacturers specifications.
 - B. The subsidy program would fund local governments or regional authorities in PM₁₀ nonattainment areas to provide subsidies for the replacement of noncertified stoves. In order to receive funding a local government or control authority must meet eligibility criteria, among which is the adoption of an ordinance that limits visible emissions from woodstoves and fireplaces during periods of air stagnation. This provision does not restrict the establishment of a woodstove curtailment program if deemed necessary.

Both programs include eligibility requirements for individual applicant households.

Funding, and Resources:

Although the Residential Woodheating Air Quality Improvement Fund was established to provide resources for the Low/No Interest Loan, and Stove Subsidy programs the legislature did not authorize an emission fee on the sale of cord wood which would have provided funding.

The Department intends to fully pursue the funding of these programs through federal assistance grants and other grant sources. The Department also intends return to the 1993 legislative session and try to establish a permanent source of funding for these programs.

At such time as funding is provided the Department will provide staff resources to administer both program, and to fully analyze the most efficient and effective means of concentrating efforts on emission reduction in the most critical areas.

Emission Reduction:

Emission reduction benefits vary considerably depending upon the number of participants, and the type of replacement heating system selected. Stove replacement subsidy programs with a high degree of participation that are focused within a limited geographical area will see the most immediate benefit in improved air quality.

If a community were to participate in a local stove replacement subsidy program it would be possible for each household to achieve a reduction in PM₁₀ emissions of approximately 50% if noncertified stoves were replaced with EPA phase II certified stoves. If each household were to replace their noncertified stove with a gas furnace the emission reduction would be approximately 99%.

II. REMOVAL OF NONCERTIFIED STOVE UPON SALE OF HOME IN PM₁₀ NONATTAINMENT AREA EFFECTIVE DECEMBER 31, 1994 (OAR 340 Division 34)

The 1990 Clean Air Act requires states to revise PM₁₀ control strategies for problem areas to include contingency plans and other provisions to insure that PM₁₀ health standards will be achieved by specified dates. HB2175 requires that after December 31, 1994

all noncertified woodstoves, except antique and cookstoves, be removed and destroyed upon sale of a home. The Department views this program as a primary contingency measure for the overall PM₁₀ control strategies required by EPA.

The requirements of the statute are immediately enforceable through civil penalties by amending OAR Chapter 340, Division 12. By December 1994, the Department will also develop an advisory committee comprised of representatives from Oregon Title Companies, the Oregon Association of Realtors, and the State Real Estate Agency in Salem. The goal of the advisory group will be to outline the most efficient means to disseminate information about the sale requirements to all home sellers in the nonattainment areas, and to ensure that the stove removal and destruction requirement is carried out.

FUNDING AND RESOURCES:

The Department will commit staff resources to the enforcement of the statute where necessary. The Department will also coordinate the advisory group efforts to enhance the development and implementation of a comprehensive education and enforcement effort in each PM₁₀ nonattainment area.

EMISSION REDUCTION:

The long term emission reduction potential of the stove removal contingency strategy will vary depending upon the turn over rate of homes with uncertified stoves, and the choice of replacement heat. An evaluation of census information and surveys of real estate transactions estimates an average annual home turn over rate of approximately 3% per year, with the average home being owned for 20 years.

A random home replacement distribution over 20 years, at 3% per year would increase the replacement rate of non-certified stoves from 5% to 8%. The expected emission reduction from both stove replacement strategies may range from 50% cleaner in the case of a certified woodstove being chosen as the replacement heating device, to 99% cleaner if a gas heater is chosen.

III. STATEWIDE WOODSTOVE CURTAILMENT (OAR 340 Division 34)

The 1991 Oregon legislature authorized the following program to be put in place in any area of the State where such a program is required under the Clean Air Act: If a local government or regional authority has not adopted or is not adequately implementing the Clean Air Act required woodstove curtailment program, the Environmental Quality Commission may adopt by rule and the Department of Environmental Quality may operate and enforce a program to curtail residential woodburning during periods of air stagnation. The curtailment program would apply to woodstoves, fireplaces, and other woodheating devices. The State curtailment program must include at a minimum:

- ◆ A provision for a two stage curtailment program based on the severity of the projected air quality conditions.
- ◆ A provision to exempt all Oregon certified woodstoves from the first stage of curtailment.
- ◆ A provision for low income exemptions.
- ◆ A provisional exemption for sole source woodburning households.
- ◆ An exemption for pelletstoves.
- ◆ A provision for the Department to defer the operation and enforcement of the curtailment program at such time as the local government or regional authority has adopted and is adequately implementing the required curtailment program.

FUNDING AND RESOURCES:

Should it become necessary for the Department to implement a State residential wood smoke curtailment program within a community the Department would seek assistance from the EPA to fund the necessary public education, daily advisory, monitoring, surveyance, and enforcement efforts.

The Department staff could provide support for a public education campaign, and distribute the daily burn advisory. The Department would explore the possibilities of contracting with local agencies to provide services in the areas of monitoring, compliance surveys, and enforcement.

EMISSION REDUCTION:

EPA guidance regarding woodheating curtailment programs suggests that a minimum 10% credit for emission reduction can be taken for a voluntary curtailment program, and that a minimum 50% emission reduction credit may be taken for a mandatory program. The Department has had several years of experience establishing and monitoring curtailment programs in the Medford, Klamath Falls, Jackson County, and Grants Pass PM₁₀ nonattainment areas.

The Department's experience with curtailment programs supports that a 30% emission reduction credit is a reasonable estimate for a voluntary woodburning curtailment program. A mandatory curtailment program, given the proper effort in the area of community education and information is capable of attaining emission reductions in the range of 70% to 90%.

IV. USED STOVE BAN (OAR 340 Division 34)

The 1991 legislature enacted a ban on the sale of noncertified used woodstoves. As of the effective date of House Bill 2175, August 5, 1991, no person shall advertise for sale, offer to sell or sell, a used woodstove that was not certified for sale as new to the 1986 Oregon woodstove emission standard. Additionally, HB2175 has charged the State Building Code Agency to amend their administrative rules, prohibiting the installation of noncertified used woodstoves.

FUNDING AND RESOURCES:

The Department's Woodheating Program staff will investigate potential violations of the noncertified used stove sales ban, and with assistance from the Department's enforcement section will take the appropriate enforcement action when necessary. The Department's Public Relations section in conjunction with the Woodheating Program staff will mount a public education and information campaign to make the public aware of the new ban on used stove sales.

The State Building Code Agency will enforce these regulations prohibiting the installation of noncertified used stoves.

EMISSION REDUCTION:

Our best information indicates that 1 out of every 4 stoves purchased is a noncertified used stove. Prohibiting their purchase and installation will ensure that the full emission credit potential offered by the normal change over to certified stoves will be realized. With the prohibition on un-certified used stoves each new stove purchase will provide at a minimum a 50% decrease in emissions or better depending upon the type of replacement heating device chosen. The 1991 Oregon Legislature adopted a new statute (HB2175) prohibiting the commercial sale of noncertified woodstoves and requiring the removal of conventional woodstoves upon sale of a home. Stove removal upon sale has been reserved as a contingency measure (see below) to be implemented in the event that the attainment strategy fails to achieve the NAAQS. Both measures greatly accelerate the woodstove changeover rate.

Fugitive Dust Control Element

A 10% reduction in urban fugitive dust emissions from fugitive dust sources is required to attain the 24-hour NAAQS on worst-case winter days. These emission reductions are mandated and enforced under the City of La Grande's Development Standards Section of the Zoning Ordinance. The ordinance requires that:

1. Construction trackout onto paved streets must be cleaned up at frequent intervals;
2. Construction vehicles are cleaned and have their loads secured to prevent carryout of dirt onto paved streets;
3. Material spilled from trucks or earth moving equipment must be removed within 8 hours;
4. Requires that dust from material storage piles or construction activity be suppressed upon notification by the City through use of dust palliative, water, compacting or other methods;
5. Unpaved roads of more than 50 feet in length used as haul roads must be treated with water or chemical suppressants to control dust emissions;
6. An approved dust control plan is required to use an unpaved commercial or industrial staging area;

7. The disturbance or removal of soil cover from any area larger than 5,000 sq.ft. is prohibited unless a dust control plan has been approved by the City;

8. All off-street parking areas including driveways and truck loading areas must be paved;

9. All access streets to industrial or commercial sites must be improved to City standards including paving, curbing, roadbed or right of way stabilization.

Since all of the heavily traveled roads in the La Grande UGB are paved, reductions in resuspended road dust from paved streets may also be considered should additional emission reductions be required. Other methods of control include the addition of asphalt shoulders and curbs to new major paved streets thereby eliminating trackout from the edge of the pavement into the traffic lanes.

The paving of unpaved roads and control of mud trackout from construction sites is also required under the City's Zoning Ordinance as is rapid cleanup of winter road sanding materials from the City streets.

Basis for 10% Credit for the Fugitive Dust Control Program

The specifics of the winter road sanding control strategy are contained in City of La Grande's Air Quality Program (Appendix 4) and commitments from the State of Oregon Highway Division (Appendix 5). The 10% credit is based on the commitments from the State and City to reduce winter road sanding by at least 10% through (a) a reduction in the amount of aggregate used by maintenance crews, (b) rapid cleanup using street washing or sweeping of road sanding materials used on major thoroughfares and (c) use of sanding materials with a lower silt content. During worst case winter days, at least a 134 pound per day emission reduction is expected from this program.

Other Strategies

The following additional elements have been developed to help assure the success of the attainment strategy. Restrictions to open burning and forestry prescribed burning are included in the attainment strategy but are no emission reduction credits have been taken for these programs.

Restrictions on Open Burning

The City of La Grande's Air Quality Program includes a prohibition (Resolution 4122, Series 1991) on open burning and the use of burn barrels on "Yellow" or "Red" woodburning curtailment days. Open burning is prohibited at all times other

than during the months of April and May; October and November under Section 8 of the Uniform Fire Code. In addition, the burning of prohibited materials (dry garbage, rubber products, asphalt, etc) in a woodstove or fireplace is prohibited.

Forestry Slash Burning

PM₁₀ emissions from forestry slash burning, both because of the magnitude of the emissions and the proximity of the burning to the nonattainment area, can potentially have a significant impact on La Grande air quality. Forestry burning is regulated under Oregon law (ORS 477.515) which requires that the State Forester and the Department of Environmental Quality jointly approve a plan to manage smoke from slash burning in areas they designate.

By statute, the Oregon Department of Forestry (ODOF) is responsible for the administration of rules (OAR 629-43-043) and written procedures to assure the protection of air quality. At present, the mandatory, daily burning instructions issued by ODOF apply only within the smoke management plan's Restricted Area which covers western Oregon (crest of the Cascades west) and the Deschutes National Forest. Since the La Grande Nonattainment Area is outside of the Restricted Area, a voluntary smoke management program will be established through the Oregon Department of Forestry to manage slash burning near La Grande. The provisions of this program will meet EPA's requirements for Reasonably Available Control Measures (RACM) for forestry smoke management programs.

Additional forestry slash burning measures are being discussed which may include establishment of a voluntary Special Protection Zone within which special restrictions would apply during the winter months when violations of NAAQS are most likely. Also under discussion is a contingency measure should the La Grande nonattainment area fail to attain the NAAQS within the deadlines established under the Act and slash burning smoke is implicated as a significant contributor. In this case, La Grande would be established as a Designated Area and a year around, mandatory smoke management program be implemented by ODOF as a contingency measure.

Public hearings on revisions to the Smoke Management Plan and adoption of rule changes by the Environmental Quality Commission and the Oregon Board of Forestry is expected prior to the November 15, 1991 deadline for SIP submission to EPA. The rule making process, however, will lag behind the SIP process. As a result, the specific revisions to the Plan have yet to be decided.

Agricultural Open Field Burning

Each summer, approximately 12,000 acres of grass seed and cereal grain stubble are burned within the Grande Ronde Valley. Because of the smoke from the burning was impairing visibility within the wilderness, a mandatory field burning smoke management program was adopted by Union County (Ordinance 1991-6) in response to the Class I area visibility impairment provisions of the Clean Air Act (Section 169A). The ordinance requires that agricultural burning be prohibited when smoke can impact either the Eagle Cap Wilderness or the La Grande PM₁₀ nonattainment area. The ordinance is enforced by Union County and is included in Appendix 6.

Although none of the past PM₁₀ NAAQS exceedances have occurred during periods when fields were being burned, the nonattainment area protection provisions of the ordinance minimize the likelihood that future smoke intrusions will cause an exceedance of the NAAQS. The provisions of the ordinance meet EPA's requirements for Reasonably Available Control Measures (RACM) for agricultural burning programs.

RACM Elements

Reasonably Available Control Measures (RACM) for Urban Fugitive Dust, Residential Wood Combustion and Prescribed Burning are defined by the EPA's April 2, 1991, Memorandum on PM₁₀ Moderate Area SIP Guidance. Further guidance is contained in EPA-450/3-88-008 (September, 1988), Control of Open Fugitive Dust Sources and EPA-450/2-89-015 (September, 1989), Guidance Document for Residential Wood Combustion Control Measures.

URBAN FUGITIVE DUST RACM MEASURES

EPA guidance requires that the following fugitive dust RACM elements be included in the PM₁₀ SIPs if the source is a significant contributor to PM₁₀ nonattainment and it is economically and technologically feasible to control:

(1) Pave, vegetate or chemically stabilize access points where unpaved traffic surfaces adjoin paved roads; (2) Require dust control plans for construction or land clearing projects; (3) Require haul trucks to be covered; (4) Provide for traffic rerouting or rapid clean up of temporary (and not readily preventable) sources of dust on paved roads (water erosion runoff, mud/dirt carryout areas, material spills, skid control sand), delineate who is responsible for clean up;

(5) Prohibit permanent unpaved haul roads, and parking or staging areas at commercial, municipal, or industrial facilities; (6) Develop traffic reduction plans for unpaved roads using speed bumps, low speed limits, etc. to encourage use of other (paved)

roads; (7) Limit use of recreational vehicles on open land (e.g., confine operations to specific areas, require use permits, outright ban); (8) Require improved material specification for and reduction of usage of skid control sand and salt (e.g., require use of coarse, nonfriable material during snow and ice season); (9) Require curbing and pave or stabilize (chemically or with vegetation) shoulders of paved roads; (10) Pave or chemically stabilize unpaved roads;

(11) Pave, vegetate, or chemically stabilize unpaved parking areas; (12) Require dust control measures for material storage piles; (13) Provide for storm water drainage to prevent water erosion onto paved roads; (14) Require revegetation, chemical stabilization, or other abatement of wind erodible soil, including lands subjected to water mining, abandoned farms, and abandoned construction sites; and (15) Rely upon the soil conservation requirements (e.g., conservation plans, conservation reserve) of the Food Security Act to reduce emissions from agricultural operations.

Fugitive dust control measures that have already been adopted by rule are found in Chapter 340, Division 21, Department of Environmental Quality. These rules apply within incorporated cities of 4,000 or more population and are enforce under OAR 340-21-060. These rules implement the following fugitive dust RACM measures:

<u>RACM Element</u>	<u>OAR 340 Division 21 Section:</u>
1	(2)(a)
2,10,11	(2)(b)
3	(2)(f)
4	(2)(g)
12	(2)(c)

In addition, the City of La Grande's Zoning Ordinance requires implementation of RACM element 4 (trackout), 9 (curbing) and 10 (paving\stabilizing unpaved roads). The contingency plan implements element 5 (paving of industrial staging areas). Emissions associated with the remaining RACM measures are not believed to be significant contributors to the nonattainment problem.

REASONABLY AVAILABLE RESIDENTIAL WOOD COMBUSTION CONTROL MEASURES

EPA guidance requires that the State PM₁₀ SIPs include strategies from each of the following four RACM measures:

1. Establish an episode curtailment program, including: a curtailment plan; a communication strategy to implement the plan; a surveillance plan (e.g., "windshield" survey, opacity trigger); and enforcement provisions including procedures, penalties, and

exemptions). A voluntary program will be deemed reasonable if the area demonstrates attainment.

The La Grande voluntary curtailment program fulfills these requirements as it includes a program evaluation survey provision and communication strategy.

2. Establish a public information program to inform and educate citizens about stove sizing, installation, proper operation and maintenance, general health risks of wood smoke, new technology stoves, and alternatives to woodheating.

The La Grande public education program, administered by the City of La Grande provides a comprehensive information on each of the elements of this RACM measure. This program is supplemented by the Department's public information program.

3. Encourage improved performance of woodburning devices by:

- Establishing a program to identify, through opacity observation, deficiencies in stove operation and maintenance. (Under such a program, advice and assistance should be provided to the identified households to help reduce visible emissions from their devices);

La Grande's voluntary curtailment surveillance program is used both to assess compliance rates and may be used to identify homeowners that are operating woodstoves with excessive emissions.

- Providing voluntary dryness certification programs for dealers and/or making free or inexpensive wood moisture checks available to burners;

The La Grande program may include a voluntary cordwood certification program implemented through local civic groups or fire districts.

- Evaluating and encouraging, as appropriate, the accelerated changeover of existing devices to new source performance standards or other new technology stoves (e.g., hybrid designs, pelletstoves) by such approaches as subsidized stove purchases tax credits or other incentives.

Accelerated changeover is encouraged through the woodstove changeout program established

under OAR 340 Division 34 and through the low income home weatherization program operated by the City of La Grande.

4. Provide inducements that would lead to reductions in the stove and fireplace population (or use) by:

- Encourage a reduction in the number of woodburning devices (i.e., removing or disabling the devices) through tax credits or other incentives;

OAR 340 Division 34 includes, as a contingency measure, removal of noncertified stoves upon home sale.

- Discouraging the resale of used stoves through taxes, fees or other incentives;

OAR 340 Division 34 bans the sale of used woodstoves.

RACM Measures not included in the La Grande SIP include:

- Discouraging the availability of free (or very inexpensive) firewood by increasing cutting fees or limiting the cutting season.
- Slowing the growth of woodburning devices in new housing units by taxes, installation permit fees, or other disincentives.

These measures are not viewed as necessary to assure NAAQS attainment.

REASONABLY AVAILABLE CONTROL MEASURES FOR PRESCRIBED BURNING

EPA guidance requires that RACM measures from prescribed (slash burning) be included where it is shown that prescribed burning is or does contribute significantly to PM₁₀ exceedances within the nonattainment area. The guidance specifies that such a program must include (1) smoke dispersion forecasts based (at minimum) on National Weather Service data; (2) a process for preparation and approval of burn plans; (3) availability of training programs for burners; (4) a public information program; (5) provisions for surveillance and enforcement of any mandatory requirements; (6) development of emission inventories and (7) State oversight of the smoke management programs.

Oregon's forestry smoke management program administered by the Oregon Department of Forestry (ODOF) is administered through a voluntary program on forest lands surrounding La Grande. The voluntary program meets all of the above RACM requirements. Smoke

dispersion forecasts issued daily by ODOF's smoke management center for the La Grande area are based on NWS and local weather data. The program requires the preparation and approval of burn plans prior to ignition. Training is provided each year by ODOF staff to all burners. For Federal employees, this training is supplemented by training programs offered by the US Forest Service and the Bureau of Land Management. ODOF and the Federal agencies all offer information on their programs to the public. Air monitoring surveillance is provided through the Department's programs and through aircraft plume tracking conducted by those conducting the burning. Emission inventories are developed in cooperation with ODOF using state of the art fuel consumption models. The Department oversees ODOF's program through periodic reviews and through ORS 477.515 which requires that the Director of the Department approve the program.

4.12.3.3 Demonstration of Attainment

This section describes the application of emission reduction credits described in Section 4.12.3.2. in demonstrating attainment of the NAAQS. The calculations are based on the application of receptor modeling and proportional rollback of 1994 analysis of projected PM₁₀ emission. The Demonstration of Attainment analysis follows EPA supplemental guidance.²⁸

Receptor modeling - proportional rollback calculations were completed in lieu of dispersion modeling because no historical meteorological database exists in La Grande. The receptor modeling - rollback approach is appropriate for use in La Grande because of the complex topography of the area, the lack of industrial emissions, the relatively uniform distribution of area source emissions and the fact that woodstove smoke and fugitive dust are the principal emission sources. Saturation monitoring studies have demonstrated that the North Willow Street site is located within the area of maximum PM₁₀ concentrations.

Appendix 8 contains the detailed rollback calculations that support the following text.

Strategy Emission Reduction - 24-Hour Worst Case Day

Attainment of the 24-hour NAAQS in 1994 will require an 17% reduction in worst case day emissions equalling a reduction of 1,447 pounds per day. The needed reduction is achieved through the strategy elements listed below.

²⁸US EPA, OAQPS Memorandum from J. Calcagni to Regional Air Directors re: PM-10 SIP Attainment Demonstration Policy for Initial Moderate Nonattainment Areas. March 4, 1991.

Table 4.12.3-7: Summary of 24-Hour Emission Reductions To Be Achieved by 1994

<u>Strategy Element</u>	<u>Credit</u>	<u>Emission Reduction</u>
Winter Road Sanding Practices	10%	134 Pounds/Day
Woodburning Strategies:		
- Woodburning Curtailment	30%	1,196 Pounds/Day
- Certification of Woodstoves	27%	746 Pounds/Day
Woodstove Strategies, Total		<u>1,942 Pounds/Day</u>
Total reduction from all strategies....		2,076 Pounds/Day
Required emission reduction		1,447 Pounds/Day

(Note: Because emission reductions are calculated on a declining balance basis, the product of percentage credits and total reduction (2,077 pounds/day) will not yield the individual element emission reductions shown. See Appendix 8)

No credits have been taken for the City of La Grande's public education programs, the voluntary forestry smoke management program. Credits related to restrictions on open burning or many of the fugitive dust control measures included in the City's Air Quality Program are not included in the demonstration of attainment because the emissions from the sources cannot be inventoried.

4.12.3.4 Air Quality Standard Maintenance

During the six year period following attainment of the NAAQS, a net decrease in emissions is projected to occur as a result of attainment strategies and the replacement of older conventional stoves with certified cordwood and pelletstoves, offsetting increases in fugitive dust and transportation emissions. Both the 24-hour and annual NAAQS are projected to be maintained past the year 2000 at which time worst case day and the annual average PM₁₀ air quality is projected to be 134 and 46 µg/m³, respectively.

4.12.3.5 Contingency Measures & Emission Reductions

Section 172(C)(9) of the Clean Air Act Amendments of 1990 Clean Air Act requires that the State Implementation Plan include contingency measures for significant sources of PM₁₀. These measures are to take effect without any further action by the state if the area fails to attain the PM₁₀ standard by the attainment date required by the Act. Contingency measures are triggered upon publication by EPA of notice in the Federal Register that the area has failed to attain the National Ambient

Air Quality Standard for PM₁₀ by the attainment date required in the Clean Air Act. Depending upon the effectiveness of the control strategies, EPA could make this determination in 1994 or subsequent years. The following elements have been included to fulfill this requirement of the Act:

State backup authority from the 1991 Legislature requires removal of noncertified woodstoves upon sale of a home. The rules to implement the statute are being proposed as a revision to OAR 340 Division 34.

Other contingency measures include a mandatory woodburning curtailment program to be established under City of La Grande ordinance designed to achieve at least a 50% compliance rate (or implemented under the Department's authority should local government fail to act). Contingencies established under Department authority include a requirement for removal of noncertified woodstoves upon sale of property and to install Reasonably Available Control Technology on industrial sources. A mandatory forestry smoke management program may be included in future revisions to the Forestry Smoke Management Plan that would be implemented should slash burning smoke be implicated as a significant contributing source to nonattainment. Collectively, these strategies will provide at least an additional 20% reduction in winter worst case day emissions.

Emission reductions obtained through implementation of the contingency plan include an additional 32 tons per year by the year 2000 in residential wood combustion smoke through implementation of the noncertified woodstove replacement program. There would be an additional reduction in annual emissions due to a mandatory curtailment program; the actual annual emission reductions would depend on the number of curtailment days per year. Additional industrial emission reductions of 78 tons per year beyond that required by the control plan would result from implementation of the RACT/BACT contingencies, although La Grande industrial sources may be operating with RACT/BACT emission control systems prior to triggering of the contingency plan.

4.12.3.6 Enforceability

The Clean Air Act requires SIP control strategies to be enforceable. Based on EPA guidance, a voluntary woodstove curtailment program may be credited with a 30% emission reduction. Emission reductions achieved in other communities that have operated aggressive voluntary curtailment programs have been shown to obtain reduction that are substantially greater than 30%. For example, the actual average compliance rate on days surveyed during the 1989-90 season under Klamath County's voluntary program was 45% as measured by infrared field surveys.

The road sanding strategy is implemented through a City of La Grande's Air Quality Program and Development Standards Section of the Zoning Ordinance as well as commitments from the Highway Division of the Oregon Department of Transportation. Industrial control measures are enforced through the Department. Union County is responsible for enforcement of the agricultural field burning smoke management program. The Oregon Department of Forestry is responsible for enforcing all provisions of the forestry smoke management program.

4.12.3.7. Public and Governmental Involvement

The PM₁₀ emission control programs implemented through this revision to the State Implementation Plan has been developed in close cooperation with the La Grande Air Quality Advisory Committee, the City of La Grande, the Oregon Department of Forestry, the Union County Seed Growers Association, the Environmental Protection Agency and others. Public comment on the SIP will be received through the written comment prior to and during public hearings on the SIP.

4.12.3.8. Emergency Action Plan Provisions

OAR 340 Division 27 describes Oregon's Emergency Action Plan. The rule is intended to prevent the excessive accumulation of air contaminants during periods of air stagnation which, if unchecked, could result in concentrations of pollutants which could cause significant harm to the public health. The rules establish criteria for identifying and declaring air pollution episodes below the significant harm level and were adopted pursuant to requirements of the Clean Air Act. The action levels found in the Plan were established by the Environmental Protection Agency and subsequently adopted by the Department.

The significant harm level for PM₁₀ particulate matter of 600 $\mu\text{g}/\text{m}^3$, 24-hour average (adopted by the Environmental Quality Commission April, 1988). The PM₁₀ "Alert" level is 350 $\mu\text{g}/\text{m}^3$; the "Warning" level is 420 $\mu\text{g}/\text{m}^3$ and the "Emergency" level is 500 $\mu\text{g}/\text{m}^3$, 24-hour average. These levels must be coupled with meteorological forecasts for continuing air stagnation to trigger the Action Plan. None of these levels have been recorded in La Grande.

Authority for the Department to regulate air pollution sources during emergency episodes is provided under ORS 468, including emissions from woodstoves. The provisions of HB2175 which authorizes the Department to regulate woodstoves are implemented under OAR 340-34-150 through - 175. These rules and statute give the Department authority to regulate woodstoves under emergency episode conditions. When there is an imminent and substantial endangerment to public health (the significant harm level), ORS 468.115 authorizes the Department, at the direction

of the Governor, to enforce orders requiring any person to cease and desist actions causing the pollution. State and local police are directed to cooperate in the enforcement of such orders.

4.12.4 Implementation of the Control Strategy

All of the elements of the attainment strategy will be adopted and implemented well within the 18 months allowed by the Clean Air Act. Specific elements of the strategy were implemented as noted below.

4.12.4.1 Schedule for Implementation

The Oregon Woodstove Certification Program became effective June 30, 1986; the City of La Grande resolution implementing a voluntary woodburning curtailment, open burning and fugitive dust control programs will be adopted and implemented by November 15, 1991. The Union County field burning smoke management program was adopted June 5th, 1991 and was implemented during the summer of 1991. The Oregon Department of Forestry will establish a voluntary smoke management plan prior to November 15, 1991.

The provisions of HB2175 (removal of stoves upon home sale, State backup authority to require mandatory woodburning curtailment programs and prohibition of the resale and installation of used noncertified woodstoves) will become effective in November of 1991. The statute was signed into law in August, 1991. Rules to implement the statute will be adopted by the Environmental Quality Commission prior to November 15, 1991. Other supporting rules, such as the RACT\BACT industrial point source contingency strategy will be adopted on the same schedule. All of these rules will be immediately effective.

4.12.4.2 Rules, Regulations and Commitments

The following rules and commitments have been adopted to assure the enforceability of the control strategies. The statutory ban on the installation of used, noncertified woodstoves is to be codified into State rules by the Building Codes Agency. Contingency measures are marked with an asterisk (*).

State of Oregon Rules

Woodstove Certification Program	OAR 340 Division 34
Woodstove Changeout Program	OAR 340 Division 34
Ban on Used Woodstove Sale	OAR 340-34-010
Industrial RACT\BACT Controls *	OAR 340-21-005 to 250
Woodstove Removal On Home Sale *	OAR 340-34-200
Mandatory Curtailment Authority *	OAR 340-34-150

City of La Grande Resolutions & Ordinances

Air Quality Improvement Program Resolution 4122, Series 1991	
City of La Grande Zoning Ordinance	Proposed
La Grande Mandatory Curtailment *	Proposed

Union County Ordinances

Field Burning	Ordinance 1991-6
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Interagency Commitments

Winter Road Sanding Program, Oregon Department of Transportation Highway Division.

Forestry Smoke Management Voluntary Program

4.12.4.3 Reasonable Further Progress

Part D of Title I of the Clean Air Act Amendments of 1990 (Section 171) requires that State Implementation Plans for PM₁₀ make Reasonable Further Progress (RFP) toward attainment of the National Ambient Air Quality Standards (NAAQS). The Act further specifies that RFP means those annual incremental reductions of PM₁₀ emissions necessary to attain the NAAQS by the attainment date. The Department believes that the scheduled implementation of the provisions of the Klamath Falls PM₁₀ SIP and attainment of the NAAQS within the Klamath Falls nonattainment area fulfills the RFP requirement of the Act.

4.12.4.4 Revisions to the Plan

In the event that the La Grande nonattainment area fails to meet Reasonable Further Progress milestones, or the applicable PM₁₀ attainment deadline, then the Department, as the designated lead agency, will first notify in writing the affected local governments and industrial organizations. Within 30 days of notification, the Department will complete a written analysis of control strategy commitments, evaluating the adequacy of implementation. Any deficiencies in implementation will be corrected through rulemaking, if necessary, within six months of the original deficiency notification. The six month time frame will accommodate the State's normal rulemaking process. Additionally, affected parties will be notified of the requirement to implement expeditiously the contingency measures, if necessary. As the lead agency, the Department will submit a plan revision that meets all relevant Clean Air Act and EPA requirements within 18 months of a notification from EPA that the area has failed to meet the attainment deadline and has been reclassified to "Serious."

4.12.4.5 New Source Review Permitting Authority

The New Source Review rules (OAR 340-20-220 to -276) and Air Contaminant Discharge Permit rules (OAR 340-20-140 to -185) identify the procedures for reviewing and permitting new sources. The significant emission rate for PM₁₀ emissions in the La Grande Nonattainment Area is twenty five tons per year (OAR 340-20-225). The New Source Review rule (OAR 340-20-240) identifies requirements for sources in nonattainment areas, including applying the lowest achievable emission rate (LAER) and a 1:1 offset ratio, both required in the La Grande Nonattainment Area.

4.12.4.6 Delegation of Lead Agency Authority

Barbara Roberts, Governor of the State of Oregon, has delegated the Department of Environmental Quality as the lead agency to implement, maintain and enforce the requirements of the Clean Air Act for PM₁₀ air quality in La Grande.

4.12.5 Resource Commitments

Residential woodburning programs are being implemented by the City of La Grande with a FY 91 budget of \$15,000 to operate public information programs, the daily woodburning advisory, and voluntary curtailment program (including field surveillance) as well as progress reporting. The Department operates the air monitoring network used by the City for the daily woodburning advisory, provides public information assistance, and administers the woodstove certification program; these services are part of the statewide Department's base program identified in the State/EPA Agreement (SEA).

Financial assistance programs are available through the City of La Grande's program to assist low-income households in weatherization and replacement of conventional woodstoves with cleaner burning units. About \$325,000 has been raised to date.

Industrial compliance assurance programs are implemented by DEQ as part of the statewide base program; resources are identified in the SEA. Open burning control programs are implemented by the City and local fire departments.

The voluntary forestry slash burning programs will be coordinated by the Oregon Department of Forestry in cooperation with the US Forest Service, the Bureau of Land Management and other private forest land owners as part of their base programs.

4.12.6 Public Involvement

Development of the La Grande PM₁₀ control strategy included several areas of public involvement including a continuing Citizen Advisory Committees, public participation at hearing on

proposed industrial source rules and attendance at hearings conducted by the La Grande City Council.

4.12.6.1 Citizen Advisory Committee

The La Grande City Manager appointed members to the La Grande Air Quality Advisory Committee in June of 1989 to assist the City and the Department in the development of control programs for the La Grande Nonattainment Area. The 13 member committee was advised of the requirements of the Clean Air Act and State Implementation Plan, considered alternative control strategies and provided recommendation to the City in October, 1989.²⁹

4.12.6.2 Public Notice

Public notice of proposed rule revisions is done through mailing lists maintained by the Department, through notifications published in local newspapers and through Department press releases.

4.12.6.3 Public Hearings

The Advisory Committee recommendations were consolidated in the form of City Resolution No. 4122, Series 1991. Public comment on the resolution were heard July 17th and August 1st, 1991 and adopted by the City on August 7, 1991. The Resolution is found in Appendix 4.

Public hearings on the proposed SIP are scheduled for October, 1991.

4.12.6.4 Intergovernmental Review

Public hearing notices regarding adoption of this revision to the State Implementation Plan will be distributed for local and State agency review through the A-95 State Clearinghouse process forty-five days prior to adoption by the Environmental Quality Commission.

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JEC:BRF
RPT\AH15035
(8/14/91)

²⁹Report and Recommendations of the La Grande Air Quality Committee to Improve Air Quality in the City of La Grande. Committee Report of October 1, 1989 submitted to the Mayor and City Council of La Grande.

**RULEMAKING STATEMENTS FOR PROPOSED LA GRANDE PM₁₀ CONTROL STRATEGY
AS A REVISION TO THE STATE OF OREGON CLEAN AIR ACT IMPLEMENTATION PLAN**

STATEMENT OF NEED FOR RULEMAKING

Pursuant to ORS 183.335(7), this statement provides information on the intended action to amend a rule.

(1) Legal Authority

This proposal amends Oregon Administrative Rules (OAR) 340-20-047. It is proposed under authority of Oregon Revised Statutes (ORS) Chapter 468.

(2) Need for these Rules

La Grande is a nonattainment area for PM₁₀ air pollution. PM₁₀ refers to particulate matter ten micrometers or smaller in diameter. PM₁₀ particles are considered a risk to human health due to the body's inability to effectively filter out particles of this size.

The federal Clean Air Act requires that States develop and adopt State Implementation Plan (SIP) revisions to assure that areas which violate the PM₁₀ health and welfare standards are brought into attainment with those standards within prescribed time frames. The proposed control strategy document describes the State of Oregon plan to attain and maintain the annual and 24-hour PM₁₀ standards in the La Grande PM₁₀ Nonattainment Area.

The principal means of achieving the necessary air quality improvements is through PM₁₀ emission reductions from woodstoves/fireplaces and road dust. Additional reductions are expected from the phase in of certified woodstoves, a ban on the installation of used, non-certified stoves, and seasonal restrictions on open burning. Contingency plans to be implemented if the airshed fails to attain the air quality standards by December 31, 1994, include implementation of a mandatory woodburning curtailment program to be established under city ordinance (with state backup authority), removal of woodstoves upon sale of a home, and possible new industrial controls.

(3) Principal Documents Relied Upon

The Clean Air Act Amendments of 1990, Title I. 42 U.S.C. 7401 et seq., as amended. November 15, 1990.

PM₁₀ SIP Development Guideline, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park NC, June 1987, EPA-450/2-86-001.

Previous staff reports to the Environmental Quality Commission (EQC):

Agenda Item D, January 22, 1988, EQC Meeting, Informational Report: New Federal Ambient Air Quality Standard for Particulate Matter (PM₁₀) and Its Effects on Oregon's Air Quality Program.

Guidance Document for Residential Wood Combustion Emission Control Measures, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park NC, September 1989, EPA-450/2-89-015.

All documents referenced may be inspected at the Department of Environmental Quality, Air Quality Division, 811 S.W. 6th Avenue, Portland, Oregon, during normal business hours.

LAND USE CONSISTENCY STATEMENT

The proposed rule changes appear to affect land use as defined in the Department's coordination program with Department of Land Conservation and Development (DLCD), but appear to be consistent with the Statewide Planning Goals.

With regard to Goal 6, (air, water, and land resources quality), the proposed changes are designed to enhance and preserve air quality in the State and are considered consistent with the Goal. The proposed rule changes do not appear to conflict with the other Goals.

Public comment on any land use issue involved is welcome and may be submitted in the same fashion as indicated for other testimony on these rules.

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 DLCD to mediate any appropriate conflicts brought to our attention by local, state, or federal authorities.

BRF:e
RPT\AH15015
(8/14/91)

**FISCAL AND ECONOMIC IMPACT STATEMENT
FOR PROPOSED LA GRANDE PM₁₀ CONTROL STRATEGY
AS A REVISION TO THE STATE IMPLEMENTATION PLAN**

PROPOSAL SUMMARY

The La Grande area exceeds Federal and State PM₁₀ air quality standards. The federal Clean Air Act requires that States develop and adopt State Implementation Plan (SIP) revisions to assure that areas which violate the PM₁₀ health and welfare standards are brought into attainment with those standards within prescribed time frames. A contingency plan is also required to be developed and automatically implemented if the area fails to meet the deadline. The proposed control strategy document describes the State of Oregon plan to attain and maintain PM₁₀ health standards in the La Grande PM₁₀ Nonattainment Area.

The principal means of achieving the necessary air quality improvements is through PM₁₀ emission reductions from woodstoves/fireplaces and road dust. Additional reductions are expected from the phase in of certified woodstoves, a ban on the installation of used, non-certified stoves, and seasonal restrictions on open burning.

The implementation of the PM₁₀ control strategy involves residents, local governments, and state and federal agencies. The group most affected by the proposed PM₁₀ control strategy for La Grande are the residents with woodstoves or fireplaces. If the contingency plan is implemented, local industry could also have to take steps to reduce plant emissions. No adverse fiscal impact on small businesses (less than 50 employees) is anticipated. Heating system dealerships may benefit from the contingency measure requiring woodstove removal upon sale of a home.

COSTS TO RESIDENTS WITH WOODSTOVES OR FIREPLACES

Woodstove and fireplace emissions will be reduced by a public education program addressing firewood seasoning and woodstove operation, a local voluntary woodburning curtailment program, the Oregon woodstove certification program, financial assistance programs for low income households for replacement of existing woodstoves with cleaner burning units, and a ban on installation of used, non-certified woodstoves.

The typical cost of woodburning curtailment is estimated at \$2-\$5 per curtailment day per woodburning home, depending primarily on the type of alternative heat, amount of weatherization, and size of home. According to a 1988 wood heating survey, approximately 67% (2,987) of the homes in La Grande burn wood. It is expected that homeowners will be asked not to burn wood on 10 to 20 days

Costs to the Oregon Department of Forestry (ODOF) associated with operation of the voluntary forestry smoke management program are about \$23,000 per year for forecasting and program coordination services. Costs to the US Forest Service and private land owners to reschedule slash burning to days with favorable smoke dispersion capacity have been estimated by ODOF at \$23,000 per year.

The contingency plan industrial emission control provisions, if implemented, will require additional plan reviews, inspections, monitoring report reviews, and other compliance assurance activities by Department of Environmental Quality staff. This additional work would be integrated into the permit program and fee structure.

The compliance assurance surveys for the voluntary woodburning curtailment program will be conducted by the City of La Grande. La Grande has been funded \$15,000 for the 1991-92 winter heating season to cover the costs associated with both the curtailment and the public education program.

BRF:a
RPT\AH15037
(8/14/91)

NOTICE OF PUBLIC HEARING

Hearing Dates: September 26,
27, 30 & October
1, 1991

Comments Due: October 2, 1991

WHO IS AFFECTED:

Individuals, especially those with woodstoves, and board product industries statewide, local governments, agricultural operations and industries in or near the Medford-Ashland, Klamath Falls, Grants Pass and La Grande PM₁₀ Nonattainment Areas.

WHAT IS PROPOSED:

The Department of Environmental Quality is proposing to amend OAR 340-20-047, the State of Oregon Clean Air Act Implementation Plan to:

- o Revise fine particulate (PM₁₀) Pollution Control Strategies for the Medford, Grants Pass and Klamath Falls areas;
- o Add a new PM₁₀ Control Strategy for the La Grande area;
- o Add new regulations for woodstoves, OAR Chapter 340, Division 34;
- o Add new contingency industrial particulate emission standards for PM₁₀ nonattainment areas, OAR Chapter 340, Division 21;
- o Revise the Medford/Grants Pass Particulate Standard Rules, OAR Chapter 340, Division 30;
- o Revise Board Products Particulate Emission Standard Rules, OAR Chapter 340, Division 25;
- o Revise Ambient Air Standard Rules, OAR Chapter 340, Division 31;
- o Revise Rogue Basin Open Burning Control Area rules, OAR Chapter 340, Division 23.

WHAT ARE THE HIGHLIGHTS:

The federal Clean Air Act requires states to submit PM₁₀ attainment Control Strategies for PM₁₀ Nonattainment Areas to the U.S. Environmental Protection Agency (EPA) by November 15, 1991. The Control Strategies specify how federal PM₁₀ air quality standards will be attained by the Act's deadline of December 31, 1994. They primarily rely on controlling PM₁₀ emissions from residential woodheating, industry and open burning.

The proposed rules which would implement PM₁₀ Control Strategies will:

- o Regulate residential woodheating according to new legislative authority including:
 - > Banning the sale of used, uncertified woodstoves statewide;
 - > allowing DEQ to prohibit woodheating on poor air quality days if local governments fail to adopt or implement such programs where needed;
 - > Requiring the destruction of uncertified woodstoves upon the sale of a home as a contingency measure if an area fails to attain compliance with the PM₁₀ standard by December 31, 1994.
- o Require industries in PM₁₀ nonattainment areas to meet Reasonably Available and Best Available Control Technology requirements of the Clean Air Act as a contingency measure if areas fail to attain compliance with the PM₁₀ standard by the Clean Air Act deadline.
- o Require tighter meteorological criteria for allowing open burning in the Rogue Basin Open Burning Control Area, and ban open burning from November through February in this area as a contingency if it fails to attain compliance with the PM₁₀ standard by the Clean Air Act deadline.
- o Address housekeeping/enforceability issues raised by EPA with respect to existing state regulations covering the Board Products Industry, Medford/Grants Pass Industrial Particulate Emission and Ambient Air Standards.

HOW TO COMMENT:

Copies of the complete proposed rule packages may be obtained from the Air Quality Division at 811 S.W. Sixth Avenue, Portland, OR 97204, or the regional office nearest you. For further information, call toll free 1-800-452-4011 (in Oregon), or contact:

Merlyn Hough at (503) 229-6446 (Medford-Ashland)
John Core at (503) 229-5380 (Klamath Falls)
Howard Harris at (503) 229-6086 (Grants Pass)
Brian Finneran at (503) 229-6278 (La Grande)
Andy Ginsburg at (503) 229-5581 (Industry)
David Collier at (503) 229-5177 (Woodstoves)

ATTACHMENT D

Public hearings will be held before a hearings officer at:

7:00 pm
September 26, 1991
Commission Hearing Room
Courthouse Annex
Klamath Falls, Oregon

7:00 pm
September 30, 1991
Smullin Center Auditorium
Rogue Valley Medical Ctr.
Medford, Oregon

7:00 pm
September 27, 1991
City Council Chambers
101 NW "A" Street
Grants Pass, Oregon

7:00 pm
October 1, 1991
City Hall
1000 Adams Avenue
La Grande, Oregon

3:00 pm
October 1, 1991
DEQ Offices
811 SW Sixth Avenue
Portland, Oregon

Oral and written comments will be accepted at the public hearings. Written comments may be sent to the DEQ, but must be received no later than 5 pm, October 2, 1991.

WHAT IS THE NEXT STEP:

After public hearings, the Environmental Quality Commission may adopt rule amendments and Control Strategies identical to the proposed amendments, adopt modified rule amendments and Control Strategies on the same subject matter, or decline to act. The adopted rules and Control Strategies will be submitted to the EPA as part of the State Clean Air Act Implementation Plan. The Commission's deliberation should come on November 7, 1991, 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.

YM:a
RPT\AH15041
(8/14/91)

168.300

PUBLIC HEALTH AND SAFETY

(2) in determining air purity standards, the commission shall consider the following factors:

- (a) The quality or characteristics of air contaminants or the duration of their presence in the atmosphere which may cause air pollution in the particular area of the state;
 - (b) Existing physical conditions and topography;
 - (c) Prevailing wind directions and velocities;
 - (d) Temperatures and temperature inversion periods, humidity, and other atmospheric conditions;
 - (e) Possible chemical reactions between air contaminants or between such air contaminants and air gases, moisture or sunlight;
 - (f) The predominant character of development of the area of the state, such as residential, highly developed industrial area, commercial or other characteristics;
 - (g) Availability of air-cleaning devices;
 - (h) Economic feasibility of air-cleaning devices;
 - (i) Effect on normal human health of particular air contaminants;
 - (j) Effect on efficiency of industrial operation resulting from use of air-cleaning devices;
 - (k) Extent of danger to property in the area reasonably to be expected from any particular air contaminants;
 - (l) Interference with reasonable enjoyment of life by persons in the area which can reasonably be expected to be affected by the air contaminants;
 - (m) The volume of air contaminants emitted from a particular class of air contamination source;
 - (n) The economic and industrial development of the state and continuance of public enjoyment of the state's natural resources; and
 - (o) Other factors which the commission may find applicable.
- (3) The commission may establish air quality standards including emission standards for the entire state or an area of the state. The standards shall set forth the maximum amount of air pollution permissible in various categories of air contaminants and may differentiate between different areas of the state, different air contaminants and different air contamination sources or classes thereof. [Formerly 449.785]

468.300. When liability for violation not applicable. The several liabilities which may be imposed pursuant to ORS 448.305, 454.010

to 454.040, 454.205 to 454.255, 454.405, 454.425, 454.505 to 454.535, 454.605 to 454.745 and this chapter upon persons violating the provisions of any rule, standard or order of the commission pertaining to air pollution shall not be so construed as to include any violation which was caused by an act of God, war, strife, riot or other condition as to which any negligence or wilful misconduct on the part of such person was not the proximate cause. [Formerly 449.825]

468.305 General comprehensive plan. Subject to policy direction by the commission, the department shall prepare and develop a general comprehensive plan for the control or abatement of existing air pollution and for the control or prevention of new air pollution in any area of the state in which air pollution is found already existing or in danger of existing. The plan shall recognize varying requirements for different areas of the state. [Formerly 449.782]

468.310 Permits. By rule the commission may require permits for air contamination sources classified by type of air contaminants, by type of air contamination source or by area of the state. The permits shall be issued as provided in ORS 468.065. [Formerly 449.727]

468.315 Activities prohibited without permit; limit on activities with permit. (1) Without first obtaining a permit pursuant to ORS 468.065, no person shall:

(a) Discharge, emit or allow to be discharged or emitted any air contaminant for which a permit is required under ORS 468.310 into the outdoor atmosphere from any air contamination source.

(b) Construct, install, establish, develop, modify, enlarge or operate any air contamination source for which a permit is required under ORS 468.310.

(2) No person shall increase in volume or strength discharges or emissions from any air contamination source for which a permit is required under ORS 468.310 in excess of the permissive discharges or emission specified under an existing permit. [Formerly 449.731]

468.320 Classification of air contamination sources; registration and reporting of sources. (1) By rule the commission may classify air contamination sources according to levels and types of emissions and other characteristics which cause or tend to cause or contribute to air pollution and may require registration or reporting or both for any such class or classes.

(2) Any person in control of an air contamination source of any class for which registration and reporting is required under subsection (1) of this section shall register

**Summary of Proposed PM₁₀ Control Strategy
La Grande Nonattainment Area**

Who? When? Key: L=Local Government S=State Authority
 E=Existing Rule N=New Strategy
 C=Contingency Plan

Residential Woodburning Controls:

- L N Woodburning public education program;
- L N Home weatherization and woodstove replacement program for low income homeowners funded at \$325,000;
- L N Voluntary woodburning curtailment program to achieve 30% compliance;
- L N Before and after "windshield surveys" to provide a means of assessing the voluntary woodstove curtailment effectiveness;
- S N Statewide ban from the 1991 Legislature on the sale and installation of used, non-certified woodstoves;
- S E EPA\DEQ certification program for new woodstoves;
- L C Mandatory woodburning curtailment program designed to achieve at least a 30% compliance rate;
- S C Backup authority from 1991 Legislature for DEQ to adopt mandatory curtailment programs in the event that local governments fail to adopt, implement or enforce local ordinances;
- S C Backup authority from 1991 Legislature to require removal of non-certified woodstoves upon sale of property.

Fugitive Dust Controls:

- L/S N Winter road sanding emissions reduced by 10%;
- L N Stabilization of dust on unpaved gravel roads;

- L N Paving of gravel streets;
- L N Phase-out of unpaved roads, parking lots and staging areas;
- L N Requirements for dust control plans for construction, land clearing or material storage piles;
- L N Paving of commercial developments;
- L N Curbing of new paved streets;
- L N Stabilization of unpaved areas using chemical palliatives;
- S N Control of highway right-of-way trackout from unpaved areas by Oregon Department of Transportation rules;

Open Burning Controls:

- L N Prohibition on residential open burning on curtailment days;
- L N Mandatory agricultural open field burning smoke management program;
- S C Voluntary forestry smoke management program implemented within Union County and surrounding forest lands if smoke is a significant contributor to nonattainment.

Industrial Controls:

- S C Require installation of RACT/BACT industrial particulate emission controls.

BRF:e
RPT\AH15017
(8/14/91)

REQUEST FOR EQC ACTION

Meeting Date: August 22, 1991
Agenda Item: E
Division: Air Quality
Section: Planning & Development

SUBJECT:

Hearing Authorization: New Industrial PM₁₀ Emission Standard Rules and Other Related Housekeeping Rule Amendments.

PURPOSE:

New and amended industrial PM₁₀ emission standards and other housekeeping rule revisions are needed to implement air pollution control strategies for PM₁₀ nonattainment areas required under the 1990 Clean Air Act.

ACTION REQUESTED:

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

- Authorize Rulemaking Hearing
- Adopt Rules
 - Proposed Rules
 - Rulemaking Statements
 - Fiscal and Economic Impact Statement
 - Public Notice

- Attachment A
- Attachment B
- Attachment C
- Attachment D

- Issue a Contested Case Order
- Approve a Stipulated Order
- Enter an Order
 - Proposed Order

- Attachment



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



DESCRIPTION OF REQUESTED ACTION:

The requested action is to provide hearing authorization for a package of new rules and rule revisions needed in support of revised and new PM₁₀ control strategies which must be submitted to the U.S. Environmental Protection Agency (EPA) by November 15, 1991 as required by the Clean Air Act. The requested action is divided into four parts of related rules.

Part 1 consists of new industrial particulate emission standards that would be applicable to industrial sources located in any PM₁₀ nonattainment area that fails to reach attainment of the PM₁₀ air quality standard by the Clean Air Act deadline of December 31, 1994, as well as to industrial sources outside the PM₁₀ nonattainment area which significantly impact the area. The contingency emission limits are based on what the Department of Environmental Quality (Department, DEQ) considers Best Available Control Technology (BACT) for purposes of Section 189 of the Clean Air Act for wood fired boilers, veneer dryers, particle dryers, air handling (primarily wood dust) systems and charcoal plants. These proposed rules are equivalent to current Medford/Grants Pass industrial particulate emission standards with the exception that they would require further control in applicable areas of the state on charcoal plants and on air conveying systems that emit between 3 and 10 tons per year of particulate matter. These rules would be tighter in all respects than current rules in the Klamath Falls and La Grande areas. Attachment F provides a comparison of the present and proposed industrial particulate emission rules incorporated into the contingency plan. Attachment H provides a basis for the Department's determination of BACT.

The Department believes that this action is required under the Clean Air Act to meet the Reasonably and Best Available Control Technology (RACT/BACT) requirements. RACT must be required no later than when the contingency plan is triggered. The Act requires BACT to be adopted within 18 months of the time the contingency plan is triggered. The Department proposes to establish one uniform set of standards that meet both RACT and BACT requirements now, and require compliance on the same schedule allowed by the Act for BACT; that is, four years after triggering of the contingency plan. The Department believes this approach would provide early guidance and would be the most cost-effective approach for industry to meet the Clean Air Act's requirements.

In Parts 2 and 3, hearing authorization is sought for a number of housekeeping measures brought about by EPA comment to clarify statewide industrial rules applicable to veneer

dryers (Part 2), including those in PM₁₀ nonattainment areas, and a number of additional PM₁₀ sources subject to special PM₁₀ control rules in the Medford-Ashland and Grants Pass areas (Part 3). EPA has been more stringent over time in its review of state rules to improve enforceability and national consistency, and has requested a number of changes in Oregon industrial rules affecting PM₁₀ nonattainment areas. EPA cannot fully approve the State PM₁₀ control strategies until these supporting industrial rules have been approved.

The proposed changes in Parts 2 and 3 include clarification and addition of certain definitions including the definitions of "Average Operating Opacity", "Design Criteria", "EPA Method 9", "Fuel Moisture Content", "Major Source", "Maximum Opacity", "Offset" and "Particulate Matter". The Proposed changes also include deletion of the design opacity requirement (average operating and maximum opacity limits would still apply), deletion of the exemption for wet plumes from opacity limits (opacity readings of wet plumes is addressed by EPA Method 9), and clarification of the application of the emission limit for exhaust gases vented to the veneer dryer from steam generation. Part 3 also includes rule changes, supported by the Department and previously authorized for public hearing by the Environmental Quality Commission (EQC) involving the monitoring of small wood-fired boiler particulate emissions in the Medford-Ashland areas. This item is included as it is being incorporated into the other necessary changes to the Medford-Ashland rules and will be on the same hearing and adoption schedule.

In Part 4, the Department is proposing to remove the restriction established in May of 1988 that limited applicability of PM₁₀ and other ambient air standards to locations that meet EPA monitoring site guidelines. EPA has indicated to the Department that such a restriction makes the Department's rules less stringent than the Clean Air Act requirement and thus makes Oregon's State Implementation Plan (SIP) unapprovable. EPA points out that flexibility must be maintained to deviate from the monitoring site guidelines if warranted by a particular situation.

AUTHORITY/NEED FOR ACTION:

<input type="checkbox"/> Required by Statute: _____	Attachment _____
Enactment Date: _____	
<input checked="" type="checkbox"/> Statutory Authority: <u>ORS 468.280-468.340</u>	Attachment <u>E</u>
<input type="checkbox"/> Pursuant to Rule: _____	Attachment _____
<input checked="" type="checkbox"/> Pursuant to Federal Law/Rule:	
Federal Clean Air Act Amendments of 1990.	Attachment _____
<input type="checkbox"/> Other: _____	Attachment _____
<input checked="" type="checkbox"/> Time Constraints:	

Meeting Date: August 22, 1991
Agenda Item: E
Page 4

The 1990 Clean Air Act requires states to submit approvable PM₁₀ control strategies, including the specific industrial and other supporting rules necessary to implement the strategies, by November 15, 1991.

DEVELOPMENTAL BACKGROUND:

<input type="checkbox"/>	Advisory Committee Report/Recommendation	Attachment	<input type="checkbox"/>
<input type="checkbox"/>	Hearing Officer's Report/Recommendations	Attachment	<input type="checkbox"/>
<input type="checkbox"/>	Response to Testimony/Comments	Attachment	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Prior EQC Agenda Items:	Attachment	<input type="checkbox"/>

Agenda Item E, April 1, 1977	Veneer Dryer Rules
Agenda Item F, March 30, 1979	Veneer Dryer Rules
Agenda Item I, July 19, 1985	Veneer Dryer Rules
Agenda Item L, April 29, 1988	Ambient Standards
Agenda Item E, September 8, 1989	Medford Industrial Rules
Agenda Item G, April 26, 1991	Small Wood-fired Boilers

<input type="checkbox"/>	Other Related Reports/Rules/Statutes:	Attachment	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Supplemental Background Information	Attachment	<u>F,G,H</u>

- F. Summary of Industrial Contingency Requirements by area.
- G. EPA correspondence describing objections to board products rules, Medford-Ashland special PM₁₀ control rules, and PM₁₀ and other ambient air quality standards.
- H. Rationale for BACT determination.

REGULATED/AFFECTED COMMUNITY CONSTRAINTS/CONSIDERATIONS:

The industrial contingencies (Part 1) could affect industrial PM₁₀ sources in or near nonattainment areas if the Clean Air Act attainment deadline were missed. The impact would be limited in Medford and Grants Pass because most sources are already required to meet this level of control. The impact would be greater in the La Grande, Eugene-Springfield and Klamath Falls areas where several sources would be subject to significantly tighter controls.

The proposed rules would establish BACT in the contingency plan instead of waiting until eighteen months after contingency trigger as allowed under Section 189 of the Clean Air Act in order to give industry some certainty of requirements early in the process and to avoid the establishment of two different standards within a short time-frame. The Department believes this approach would provide early guidance and would be the most cost-effective approach for industry to meet the Clean Air Act's requirements.

Meeting Date: August 22, 1991

Agenda Item: E

Page 5

However, there are two potential concerns with this approach. First, industrial sources may argue that the Clean Air Act does not require BACT to be included in the contingency plan submitted in November, 1991 (which is true). Second, some members of the public may argue that establishing BACT now could result in less stringent emission standards than if the Department waited until 1996 (due to potential control technology advances).

The proposed contingency requirement for wood-waste boilers over 35 million Btu/hr allows sources to save a portion of their emission reductions (banking) for later expansion, as is presently allowed in the Medford-Ashland rules. The Department is aware that future EPA guidance interpreting the 1990 amendments to the Clean Air Act may restrict the use of banking which could require revisions to these or other rules.

The proposed contingency requirements for charcoal plants would apply only to plants with heat recovery (presently Royal Oak in Medford). Heat recovery cools the plume which results in decreased dispersion and also makes the plume less costly to control and more amenable to available control technology. However, establishment of additional requirements for sources with heat recovery could create a competitive advantage for sources which do not recover waste heat (presently Kingsford in Springfield) and could discourage this form of energy conservation. Some sources may feel this distinction is inequitable.

The proposed industrial housekeeping rule revisions (Part 2) are intended to provide clarification, improve enforceability, and insure EPA approval of the State Implementation Plan. Since these revisions do not change the intent of the rules, the Department does not expect the revisions to affect the operation of the emission sources subject to the rules. The revisions to boiler monitoring requirements would reduce emission monitoring costs for small boiler operators.

The proposed housekeeping revisions to the ambient standard (Part 4) should have no effect on the determination of the ambient air pollutant concentrations. Ambient air pollutant concentrations should continue to be monitored by approved methods at sites which meet the EPA monitoring siting guidelines.

PROGRAM CONSIDERATIONS:

If an area fails to meet the December 31, 1994, or later deadlines of the Clean Air Act, the new industrial contingency requirements (Part 1) would necessitate additional plan reviews, permit modifications, inspections, and other compliance assurance activities by Department of Environmental Quality staff. This additional work could require additional staff which would need to be supported by increased permit fees.

The industrial housekeeping revisions (Parts 2 and 3) should be helpful to DEQ staff in interpreting the intent and enforcing the existing rules. The housekeeping amendments to ambient standards would have no programmatic effects.

ALTERNATIVES CONSIDERED BY THE DEPARTMENT:

The proposed industrial contingency standards (Part 1) exceed Reasonably Available Control Technology (RACT) which must be required under the Clean Air Act, and the Department believes the standards will also meet Best Available Control Technology (BACT) which must be required as well if the area fails to attain by the deadline. The Department evaluated establishing BACT after an area fails to meet the attainment date as allowed by the Act and concluded that establishing one set of requirements for both RACT and BACT with a compliance schedule equal to the Clean Air Act schedule for BACT will meet the Act's requirements and avoid requiring industry to meet RACT and then a few years later be subject to BACT.

The Department also evaluated whether existing industrial rules could be determined to meet RACT/BACT and whether industry could be found to be an insignificant contributor to PM₁₀ levels and thus would need no further controls. Technical justification could not be developed for either of these alternatives.

Many of the proposed industrial housekeeping revisions (Parts 2 and 3) are straight-forward technical changes such as corrected citations and clarified definitions. Other housekeeping amendments required extensive discussions by DEQ and EPA staff to develop rule revisions that are approvable by EPA but provide DEQ the flexibility needed to equitably implement more stringent industrial control strategies in PM₁₀ nonattainment areas.

Meeting Date: August 22, 1991
Agenda Item: E
Page 7

The alternative of maintaining existing ambient standard applicability (Part 4) was considered and rejected because it could jeopardize approval of the PM₁₀ control strategies.

DEPARTMENT RECOMMENDATION FOR ACTION, WITH RATIONALE:

The Department recommends that the proposed new rules and rule revisions be authorized for public hearings to be held in conjunction with hearings on the PM₁₀ SIP's. All of the revisions are needed to ensure that EPA can approve the PM₁₀ control strategies. Failure to submit approvable SIP's would result in federal sanctions and ultimately a federal control plan. The Department believes the proposed rules will satisfy Clean Air Act requirements.

CONSISTENCY WITH STRATEGIC PLAN, AGENCY POLICY, LEGISLATIVE POLICY:

The Department is not aware of any conflicts with the strategic plan, agency policy, or legislative policy.

ISSUES FOR COMMISSION TO RESOLVE:

Does the Commission agree to adopt RACT and BACT at the same time or should the rules be staggered by 18 months as allowed by EPA guidance.

INTENDED FOLLOWUP ACTIONS:

1. Hold public hearings on proposed rule revisions.
2. Summarize public testimony and respond to issues.
3. Propose adoption, with appropriate revisions in response to testimony, at November 1991 EQC Meeting.

Meeting Date: August 22, 1991
Agenda Item: E
Page 8

Approved:

Director:

J. L. Hamm

Division:

Shirley Greenwood

Section:

John Kawalazgh

Report Prepared By: Merlyn Hough (229-6446)
Andy Ginsburg (229-5581)
Doug Brannock (229-5836)

Date Prepared: August 14, 1991

MLH:ADG:LDB:a
RPT\AH15025
(8/14/91)

Part 1: Industrial Contingency Requirements; Amendments to
Division 21

Industrial Contingency Requirements for PM₁₀ Nonattainment Areas

Purpose

340-21-200 The following rules establish Reasonably Available Control Technology (RACT) and Best Available Control Technology (BACT) requirements on existing industrial sources as required under section 189 of the Clean Air Act. These requirements become effective in a PM₁₀ nonattainment area if the area fails to attain the national ambient air quality standard for PM₁₀ by the applicable attainment date in the Clean Air Act.

Relation to Other Rules

340-21-205 OAR 340-21-200 through 340-21-255 shall apply in addition to all other rules of the Environmental Quality Commission. The adoption of these rules shall not, in any way, affect the applicability of all other rules of the Environmental Quality Commission and the latter shall remain in full force and effect, except as expressly provided otherwise. In cases of apparent conflict, the most stringent rule shall apply.

Applicability

340-21-210 (1) OAR 340-21-200 through 340-21-255 shall apply in a PM₁₀ nonattainment area upon publication by EPA of notice in the Federal Register that the area has failed to attain the national ambient air quality standard for PM₁₀ by the attainment date required in the Clean Air Act.

(2) (a) OAR 340-21-200 through 340-21-255 shall apply to a major source located outside of a PM₁₀ nonattainment area upon a determination by the Department based upon a study conducted under subsection (b) of this section that the source has a significant impact on a PM₁₀ nonattainment area affected under section (1) of this rule.

(b) Upon request of the Department, the owner or operator of any source with the potential to have a significant impact on a PM₁₀ nonattainment area shall conduct, prior to the attainment date required in the Clean Air Act and in accordance with a study protocol approved by the Department, a receptor and dispersion modeling study of the impact of emissions from the source on the PM₁₀ nonattainment area.

Definitions

340-21-215 As used in OAR 340-21-200 through 340-21-255, unless otherwise required by context:

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

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

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

(4) "Contingency Requirements" means the requirements of OAR 340-21-200 through 340-21-255.

(5) "Design Criteria" means the numerical as well as narrative description of the basis of design including, but not necessarily limited to, design flow rates, temperatures, humidities, descriptions of the types and chemical species of contaminants, uncontrolled and expected controlled mass emission rates and concentrations, scopes of any vendor-supplied and owner-supplied equipment and utilities, and a description of any operational controls.

(6) "EPA" means the United States Environmental Protection Agency.

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

(8) "General Arrangement", in the context of the compliance schedule requirements in this division, means drawings or reproductions which show, as a minimum, the size and location of the control equipment on a source plot plan, the location of equipment served by the emission-control system, the location and elevation above grade of the ultimate point of contaminant emission to the atmosphere, and the diameter of the emission vent.

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

(10) "Large Sawmill" means a sawmill and/or planing mill which produces 25,000 or more board feet/shift of finished product.

(11) "Lowest Achievable Emission Rate" or "LAER" is defined in OAR 340-20-225.

(12) "Major Source" is defined in OAR 340-20-225.

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

(14) "Particulate Matter" means all solid or liquid material, other than uncombined water, emitted to the ambient air as measured in accordance with the Department Source Sampling Manual. Particulate matter emission determinations shall consist of the average of three separate consecutive runs having a minimum sampling time of one hour each, a maximum sampling time of eight hours each, and a minimum sampling volume of 31.8 dscf each. Wood waste boilers and charcoal producing plants shall be tested with DEQ Method 5; veneer dryers, wood particle dryers and fiber dryers

shall be tested with DEQ Method 7; and air conveying systems shall be tested with DEQ Method 8.

(15) "Plywood" means a flat panel built generally of an odd number of thin sheets of veneers of wood in which the grain direction of each ply or layer is at right angles to the one adjacent to it.

(16) "Press/Cooling Vents" means any openings, generally located immediately above the board press or board cooling area, through which particulate and gaseous emissions from panelboard manufacturing (including, but not limited to, particleboard and hardboard) are exhausted, either by natural draft or by powered fan, from the building housing the process.

(17) "Significant Impact" means an annual average impact of 1.0 $\mu\text{g}/\text{m}^3$ or 24-hour average impact of 5.0 $\mu\text{g}/\text{m}^3$ of PM₁₀ from a source at the point of maximum concentration within a PM₁₀ nonattainment area as computed by a receptor and dispersion model approved by the Department.

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

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

Compliance Schedule for Existing Sources

340-21-220 (1) Except as provided in section (2) of this rule, compliance with applicable contingency requirements for a source that is located in an area prior to the date the contingency requirements first apply under OAR 340-21-210 shall be demonstrated as expeditiously as possible, but in no case later than the following schedule:

(a) No later than twelve months after the date the contingency requirements first apply under OAR 340-21-210, the owner or operator shall submit Design Criteria and a Notice of Intent to Construct for emission control systems for Department review and approval; and if the Department disapproves the Design Criteria, the owner or operator shall revise the Design Criteria to meet the Department's objections and submit the revised Design Criteria to the Department no later than one month after receiving the Department's disapproval;

(b) No later than three months after receiving the Department's approval of the Design Criteria, the owner or operator shall submit to the Department a General Arrangement and copies of purchase orders for any emission-control devices;

(c) No later than nine months after receiving the Department's approval of the Design Criteria, the owner or operator shall submit to the Department vendor drawings as approved for construction of any emission-control devices and specifications of any other major equipment in the emission control system in sufficient detail to demonstrate that the requirements of the Design Criteria will be satisfied;

(d) No later than twelve months after receiving the Department's approval of the Design Criteria, the owner or operator shall begin construction of any emission-control devices;

(e) No later than twenty-four months after receiving the Department's approval of Design Criteria, the owner or operator shall complete construction in accordance with the Design Criteria;

(f) No later than thirty months after receiving the Department's approval of Design Criteria, but no later than forty-eight months from the date the contingency requirements first apply under OAR 340-21-210, the owner or operator shall demonstrate compliance with the applicable contingency requirements.

(2) Section (1) of this rule shall not apply if the owner or operator has demonstrated within six months after the date the contingency requirements first apply under OAR 340-21-210 that the source is capable of being operated and is operated in continuous compliance with applicable contingency requirements and the Department has agreed with the demonstration in writing. The Department may grant an extension of up to twelve months after the date the contingency requirements first apply under OAR 340-21-210 for a source to demonstrate compliance under this section. The applicable contingency requirements shall be incorporated in the air contaminant discharge permit issued to the source.

Wood-Waste Boilers

340-21-225 (1) No person shall cause or permit the emission into the atmosphere from any wood-waste boiler that is located on a plant site where the total heat input capacity from all wood-waste boilers is less than or equal to 35 million BTU/hr:

(a) Any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:

(A) As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart; or

(B) Equal to or greater than 20% opacity; and

(b) Particulate matter in excess of:

(A) 0.2 grains per standard cubic foot, corrected to 12% CO₂, for existing sources; or

(B) 0.1 grains per standard cubic foot, corrected to 12% CO₂, for new sources.

(2) No person shall cause or permit the emission of particulate matter from any wood-waste boiler that is located on a plant site where the total heat input capacity from all wood-waste boilers is greater than 35 million BTU/hr unless the boiler has been equipped with emission control equipment which:

(a) Limits emissions of particulate matter to LAER as defined by the Department at the time the Department approves the control device; and

(b) Limits visible emissions such that their opacity does not exceed 5% for more than an aggregate of 3 minutes in any one

hour, unless the permittee demonstrates by source test that emissions can be limited to LAER at higher visible emissions but in no case shall emissions equal or exceed 10% for more than an aggregate of 3 minutes in any one hour. Specific opacity limits shall be included in the Air Contaminant Discharge Permit for each affected source.

(c) For purposes of OAR 340-20-265 and 340-20-310, the boiler mass emission limits shall be based on particulate matter emissions of 0.030 grains per standard dry cubic foot, corrected to 12% CO₂.

Veneer Dryers

340-21-230 No person shall operate any veneer dryer except in compliance with OAR 340-30-021.

Wood Particle Dryers at Particleboard Plants

340-21-235 No person shall cause or permit the emission of particulate matter from wood particle dryers at a particleboard plant site except in compliance with OAR 340-30-030;

Hardboard Manufacturing Plants

340-21-240 (1) No person shall cause or permit the total emissions of particulate matter from all sources within a hardboard plant, other than press/cooling vents, in excess of 0.25 pounds per 1,000 square feet of hardboard produced on a 1/8" basis of finished product equivalent.

(2) No person shall cause or permit the total emissions of particulate matter from all press/cooling vents at a hardboard plant site to exceed 0.15 pounds per 1,000 square feet of hardboard produced on a 1/8" basis of finished product equivalent.

Charcoal Producing Plants

340-21-245 (1) No person shall cause or permit the emission of particulate matter from charcoal producing plant sources with heat recovery boilers including, but not limited to, charcoal furnaces, heat recovery boilers, and wood dryers using any portion of the charcoal furnace off-gases as a heat source, in excess of a total from all sources within the plant site of 5.0 pounds per ton of charcoal produced.

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

(3) Charcoal producing plants as described in section (1) of this rule shall be exempt from the limitations of OAR 340-21-030(1) and (2) and 340-21-040.

(4) Charcoal producing plants without heat recovery boilers shall operate in compliance with OAR 340-30-010 and 340-30-040.

Air Conveying Systems

340-21-250 (1) No person shall cause or permit the emission of particulate matter in excess of 0.1 grains per standard cubic foot from any air conveying system emitting less than or equal to 3 tons of particulate matter to the atmosphere during any 12-month period beginning on or after January 1, 1990.

(2) All air conveying systems emitting greater than 3 tons of particulate matter to the atmosphere during any 12-month period beginning on or after January 1, 1990 shall be equipped with a control system with a collection efficiency of at least 98.5 percent or equivalent control as approved by the Department.

Fugitive Emissions

340-21-255 The owner or operator of a large sawmill, any plywood mill or veneer manufacturing plant, particleboard plant, hardboard plant, or charcoal manufacturing plant shall comply with OAR 340-30-043.

Part 2: House-keeping Amendments to State-wide Veneer Dryer
Rules: Amendments to Division 25.

Board Products Industries
(Veneer, Plywood,
Particleboard, Hardboard)

Definitions

340-25-305 As used in OAR 340-25-305 through 340-25-325, unless otherwise required by context:

{+1} (1) "Average Operating Opacity" means the average of the opacity observations taken using EPA Method 9 on three separate days within a 12-month period with a minimum of 48 opacity readings taken on each day; a violation of the average operating opacity limitation is judged to have occurred if the average of the three day observations is greater than the specified average operating opacity limitation.

{+2} (2) "Department" means Department of Environmental Quality.

{+3} (3) "Emission" means a release into the outdoor atmosphere of air contaminants.

(4) "EPA Method 9" means the method for Visual Determination of the Opacity of Emissions From Stationary Sources as promulgated by the U.S. Environmental Protection Agency in Title 40 of the Code of Federal Regulations, Part 60, Appendix A, Method 9.

(5) "Fuel Moisture Content By Weight Greater Than 20 Percent" means bark, hogged wood waste, or other wood with an average moisture content of more than 20 percent by weight on a wet basis as used for fuel in the normal operation of a wood-fired veneer dryer as measured by ASTM D4442-84 during compliance source testing.

(6) "Fuel Moisture Content By Weight Less Than 20 Percent" means pulverized ply trim, sanderdust, or other wood with an average moisture content of 20 percent or less by weight on a wet basis as used for fuel in the normal operation of a wood-fired veneer dryer as measured by ASTM D4442-84 during compliance source testing.

{+4} (7) "Fugitive Emissions" means dust, fumes, gases, mist, odorous matter, vapors or any combination thereof not easily given to measurement, collection, and treatment by conventional pollution control methods ~~{are defined by section 340-21-050(1)}~~.

{+5} (8) "Hardboard" means a flat panel made from wood that has been reduced to basic wood fibers and bonded by adhesive properties under pressure.

(9) "Maximum Opacity" means the opacity as determined by EPA Method 9 (average of 24 consecutive observations).

{+6} (10) "Opacity" ~~{is defined by section 340-21-005(4)}~~ means the degree to which an emission reduces transmission of light or obscures the view of an object in the background.

~~{(12)}~~ (11) "Opacity readings" are the individual readings (each 15 seconds) as used in EPA Method 9 ~~{which comprise a visual opacity determination}~~.

~~{(4)}~~ (12) "Operations" includes plant, mill, or facility.

(13) "Particulate Matter" means all solid or liquid material, other than uncombined water, emitted to the ambient air as measured by DEQ Method 7 in accordance with the Department Source Test Manual. Particulate matter emission determinations shall consist of the average of three separate consecutive runs having a minimum sampling time of one hour each, a maximum sampling time of eight hours each, and a minimum sampling volume of 31.8 dscf each.

~~{(5)}~~ (14) "Particleboard" means matformed flat panels consisting of wood particles bonded together with synthetic resin or other suitable binder.

~~{(6)}~~ (15) "Person" ~~{means the same as ORS 468.005(5)}~~ includes individuals, corporations, associations, firms, partnerships, joint stock companies, public and municipal corporations, political subdivisions, the state and any agencies thereof, and the Federal Government and any agencies thereof.

~~{(7)}~~ (16) "Plywood" means flat panel built generally of an odd number of thin sheets of veneers of wood in which the grain direction of each ply or layer is at right angles to the one adjacent to it.

~~{(14)}~~ (17) "Special problem area" means the formally designated Portland, Eugene-Springfield, and Medford AQMAS and other specifically defined areas that the Environmental Quality Commission may formally designate in the future. The purpose of such designation will be to assign more stringent emission limits as may be necessary to attain and maintain ambient air standards or to protect the public health or welfare.

~~{(8)}~~ (18) "Tempering oven" means any facility used to bake hardboard following an oil treatment process.

~~{(9)}~~ (19) "Veneer" means a single flat panel of wood not exceeding 1/4 inch in thickness formed by slicing or peeling from a log.

~~{(11)}-"Visual opacity determination"-consists of a minimum of 25 opacity readings recorded every 15 to 30 seconds and taken by a trained observer-}~~

~~{(15)}~~ (20) "Wood fired veneer dryer" means a veneer dryer which is directly heated by the products of combustion of wood fuel in addition to or exclusive of steam or natural gas or propane combustion.

Stat. Auth.: ORS Ch. 468

Hist.: DEQ 26, f.3-31-71, ef.4-25-71; DEQ 132, f.& ef.4-11-77

Veneer and Plywood Manufacturing Operations

340-25-315 (1) Veneer Dryers:

(a) Consistent with section 340-25-310 (1) through (4), it is the object of this section to control air contaminant emissions,

New Industrial PM₁₀ Emission Standard
Rules and Other House-Keeping Measures

Attachment A
(Part 2)

including, but not limited to, condensible hydrocarbons such that visible emissions from each veneer dryer are limited to a level which does not cause a characteristic "blue haze" to be observable;

(b) No person shall operate any veneer dryer such that visible air contaminants emitted from any dryer stack or emission point exceed:

~~[(A) A design opacity of 10%;]~~

~~[(B)]~~ (A) An average operating opacity of 10%; and

~~[(C)]~~ (B) A maximum opacity of 20%. ~~[Where the presence of uncombined water is the only reason for the failure to meet the above requirements, said requirements shall not apply.]~~

(c) Particulate emissions from wood fired veneer dryers shall not exceed:

(A) 0.75 pounds per 1000 square feet of veneer dried (3/8" basis) for units using fuel which has a moisture content by weight of 20% or less;

(B) 1.50 pounds per 1000 square feet of veneer dried (3.8" basis) for units using fuel which has a moisture content by weight of greater than 20%;

(C) In addition to paragraphs (9)(c)(A) and (B) of this section, 0.40 pounds per 1000 pounds of steam generated from combustion exhaust gases vented to the veneer dryer. ~~[The heat source of wood-fired veneer dryers is exempted from rule 340-21-030.]~~

(d) Exhaust gases from fuel-burning equipment vented to the veneer dryer are exempt from OAR 340-21-020.

~~[(d)]~~ (e) Each veneer dryer shall be maintained and operated at all times such that air contaminant generating processes and all contaminant control equipment shall be at full efficiency and effectiveness so that the emission of air contaminants are kept at the lowest practicable levels;

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

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

~~[(g)]~~ (h) The Department may require more restrictive emission limits than provided in subsection (1)(b) and (c) of this rule for an individual plant upon a finding by the Commission that the individual plant is located or is proposed to be located in a special problem area. The more restrictive emission limits for special problem areas may be established on the basis of allowable emissions expressed in opacity, pounds per hour, or

total maximum daily emissions to the atmosphere, or a combination thereof.

(2) Other Emission Sources:

(a) No person shall cause to be emitted particulate matter from veneer and plywood mill sources, including, but not limited to, sanding machines, saws, presses, barkers, hogs, chippers, and other material size reduction equipment, process or space ventilation systems, and truck loading and unloading facilities in excess of a total from all sources within the plant site of one (1.0) pound per 1000 square feet of plywood or veneer production on a 3/8 inch basis of finished product equivalent'

(b) Excepted from subsection (2)(a) of this rule, are veneer dryers, fuel burning equipment, and refuse burning equipment.

(3) Monitoring and Reporting: The Department may require any veneer dryer facility to establish an effective program for dryer emission point. The program shall be subject to review and approval by the Department and shall consist of the following:

(a) A specified minimum frequency for performing visual opacity determinations on each veneer dryer emission point;

(b) All data obtained shall be recorded on copies of a "Veneer Dryer Visual Emissions Monitoring Form" which shall be provided by the Department of Environmental Quality or on an alternative form which is approved by the Department; and

(c) A specified period during which all records shall be maintained at the mill site for inspection by authorized representatives of the Department.

Stat. Auth.: ORS Ch. 468

Hist.: DEQ 26, f.3-31-71, ef.4-25-71; DEQ 37, f.2-15-72, ef. 3-1-72; DEQ 43(Temp), f. & ef.5-5-72 thru 9-1-72; DEQ 48, f.9-20-72, ef.10-1-72; DEQ 52, f.4-9-73, ef.5-1-73; DEQ 83, f.1-30-75, ef.2-25-75; DEQ 132, f. & ef.4-11-77; DEQ 7-1979, f. & ef. 4-20-79; DEQ 10-1985, f. & ef.8-8-85

Part 3: House-keeping amendments to Medford/Ashland and Grants
Pass rules; Amendments to Division 30.

DIVISION 30

SPECIFIC AIR POLLUTION CONTROL RULES FOR
THE MEDFORD-ASHLAND AIR QUALITY
MAINTENANCE AREA AND THE
GRANTS PASS URBAN GROWTH AREA

Purpose and Application

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

Stat. Auth.: ORS Ch. 468

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

Definitions

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

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

(2) "Average Operating Opacity" means the average of the opacity [determinations] observations taken using EPA Method 9 on three separate days within a 12-month period with a minimum of 48 opacity readings taken ~~[at 15-second intervals]~~ on each day; a violation of the average operating opacity limitation is judged to have occurred if the average ~~[opacity on each of the three days]~~ of the three day observations is greater than the specified average operating opacity limitation.

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

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

New Industrial PM₁₀ Emission Standard
Rules and Other House-Keeping Measures

Attachment A
(Part 3)

~~{(5)}--"Criteria Pollutants" means Particulate Matter, Sulfur Oxides, Nonmethane Hydrocarbons, Nitrogen Oxides, or Carbon Monoxide, or any other criteria pollutant established by the U.S. Environmental Protection Agency.~~

~~{(6)}~~ (5) "Department" means Department of Environmental Quality.

~~{(7)}~~ (6) "Design Criteria" means the numerical as well as verbal description of the basis of design, including but not necessarily limited to design flow rates, temperatures, humidities, contaminant descriptions in terms of types and chemical species, mass emission rates, concentrations, and specification of desired results in terms of final emission rates and concentrations, and scopes of vendor supplies and owner-supplied equipment and utilities, and a description of any operational controls.

~~{(8)}--"Design Opacity" means the opacity for which the veneer drying emission control system is designed that is consistent with the average operating opacity during normal operation of the proposed pollution control equipment or operating procedures on similar veneer dryers operating under similar process conditions.~~

~~{(9)}~~ (7) "Domestic Waste" means combustible household waste, other than wet garbage, such as paper, cardboard, leaves, yard clippings, wood, or similar materials generated in a dwelling housing four (4) families or less, or on the real property on which the dwelling is situated.

~~{(10)}~~ (8) "Dry Standard Cubic Foot" means the amount of gas that would occupy a volume of one cubic foot, if the gas were free of uncombined water at standard conditions.

~~{(11)}~~ (9) "Emission" means a release into the outdoor atmosphere of air contaminants.

~~{(12)}~~ (10) "EPA Method 9" means the method for Visual Determination of the Opacity of Emissions From Stationary Sources as promulgated by the U.S. Environmental Protection Agency in Title 40 of the Code of Federal Regulations, Part 60, Appendix A, Method 9.

~~{(13)}~~ (11) "Facility" means an identifiable piece of process equipment. A stationary source may be comprised of one or more pollutant-emitting facilities.

~~{(14)}~~ (12) "Fuel Moisture Content By Weight Greater Than 20 Percent" means bark, hogged wood waste, or other wood with an average moisture content of more than 20 percent by weight on a wet basis as used for fuel in the normal operation of a wood-fired veneer dryer as measured by ASTM D4442-84 during compliance source testing.

~~{(15)}~~ (13) "Fuel Moisture Content By Weight Less Than 20 Percent" means pulverized ply trim, sanderdust, or other wood with an average moisture content of 20 percent or less by weight on a wet basis as used for fuel in the normal operation of a wood-fired veneer dryer as measured by ASTM D4442-84 during compliance source testing.

New Industrial PM₁₀ Emission Standard
Rules and Other House-Keeping Measures

Attachment A
(Part 3)

~~{(16)}~~ (14) "Fugitive Emissions" means dust, fumes, gases, mist, odorous matter, vapors, or any combination thereof not easily given to measurement, collection and treatment by conventional pollution control methods.

~~{(17)}~~ (15) "General Arrangement", in the context of the compliance schedule requirements in section 340-32-045(2), means drawings or reproductions which show as a minimum the size and location of the control equipment on a source plot plan, the location of equipment served by the emission-control system, and the location, diameter, and elevation above grade of the ultimate point of discharging contaminants to the atmosphere.

~~{(18)}~~ (16) "Grants Pass Urban Growth Area" means the area within the Grants Pass Urban Growth Boundary as shown on the Plan and Zoning Maps for the City of Grants Pass as of 1 February 1988.

~~{(19)}~~ (17) "Hardboard" means a flat panel made from wood that has been reduced to basic wood fibers and bonded by adhesive properties under pressure.

~~{(20)}~~ (18) "Lowest Achievable Emission Rate" or "LAER" is defined by section 340-20-225~~{(13)}~~

~~{(21)}~~ (19) "Maximum Opacity" means the opacity as determined by EPA Method 9 (average of 24 consecutive observations).

~~{(22)}~~ (20) "Medford-Ashland Air Quality Maintenance Area" is defined as beginning at a point approximately one mile NE of the town of Eagle Point, Jackson County, Oregon, at the NE corner of Section 36, T35S, R1W; thence south along the Willamette Meridian to the SE corner of Section 25, T37S, R1W; thence SE along a line to the SE corner of Section 9, T39S, R2E; thence SSE to the corner of Section 22, T39S, R2E; thence south to the SE corner of Section 27, T39S, R2E; thence SW to the SE corner of Section 33, T39S, R2E; thence NW to the NW corner of Section 36, T39S, R1E; thence west to the SW corner of Section 26, T39S, T1E; thence west to the SW corner of Section 12, T#(S, R1W; thence NW along a line to the SW corner of Section 20, T38S, R1W; thence west to the SW corner of Section 24, T38S, R2W; thence NW along a line to the SW corner of Section 4, T38S, R2W; thence west to the SW corner of Section 5, T38S, R2W; thence NW along a line to the SW corner of Section 31, T37S, R2W; thence north along a line to the Rogue River, thence north and east along the Rogue River to the north boundary of Section 32, T35S, R1W; thence east along a line to the point of beginning.

~~{(23)}~~ (21) "Modified Source" means any source with a "major modification" as defined in OAR 340-20-225. ~~{any-physical-change in,--or-change-in-the-method-of,--operation-of-a-stationary-source which-increases-the-potential-emission-of-criteria-pollutants-over-permitted-limits,--including-those-pollutants-not-previously emitted.~~

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

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

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

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

~~(C) Change in ownership of a source.~~

~~{(24)}~~ (22) "New Source" means any source not previously existing or having an Air Contaminant Discharge Permit on the effective date of these rules.

~~{(25)}~~ (23) "Offset" is defined by OAR 340-20-225. ~~{means the reduction of the same or similar air contaminant emissions by the source;~~

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

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

~~{(26)}~~ (24) "Opacity" means the degree to which an emission reduces transmission of light and obscures the view of an object in the background.

~~{(27)}~~ (25) "Open Burning" means burning conducted in such a manner that combustion air and combustion products may not be effectively controlled including, but not limited to, burning conducted in open outdoor fires, burn barrels, and backyard incinerators.

~~{(28)}~~ (26) "Particleboard" means matformed flat panels consisting of wood particles bonded together with synthetic resin or other suitable binders.

~~{(29)}~~ (27) "Particulate Matter" means all solid or liquid material, other than uncombined water, emitted to the ambient air as measured in accordance with the Department Source Sampling Manual. Particulate matter emission determinations shall consist of the average of three separate consecutive runs having a minimum sampling time of one hour each, a maximum sampling time of eight hours each, and a minimum sampling volume of 31.8 dscf each. Wood waste boilers and charcoal producing plants shall be tested with DEQ Method 5; veneer dryers, wood particle dryers and fiber dryers shall be tested with DEQ Method 7; and air conveying systems shall be tested with DEQ Method 8. ~~{any matter, except uncombined water, which exists as a liquid or solid at standard conditions.}~~

~~{(30)}~~ (28) "Person" includes individuals, corporations, associations, firms, partnerships, joint stock companies, public and municipal corporations, political subdivisions, the state and any agencies thereof, and the federal government and any agencies thereof.

~~{(31)}~~ (29) "Rebuilt Boiler" means a physical change after April 29, 1988, to a wood-waste boiler or its air-contaminant emission control system which is not considered a "modified source" and for which the fixed, depreciable capital cost of added

or replacement components equals or exceeds fifty percent of the fixed depreciable cost of a new component which has the same productive capacity.

~~{(32)}~~ (30) "Source" means any structure, building, facility, equipment, installation or operation, or combination thereof, which is located on one or more contiguous or adjacent properties and which is owned or operated by the same person, or by persons under common control.

~~{(33)}~~ (31) "Standard Conditions" means a temperature of 60 degrees

Fahrenheit (15.6 degrees Celsius) and a pressure of 14.7 pounds per square inch absolute (1.03 Kilograms per square centimeter).

~~{(34)}~~ (32) "Veneer" means a single flat panel of wood not exceeding 1/4 inch in thickness formed by slicing or peeling from a log.

~~{(35)}~~ (33) "Veneer Dryer" means equipment in which veneer is dried.

~~{(36)}~~ (34) "Wood-fired Veneer Dryer" means a veneer dryer which is directly heated by the products of combustion of wood fuel in addition to or exclusive of steam or natural gas or propane combustion.

~~{(37)}~~ (35) "Wigwam Waste Burner" means a burner which consists of a single combustion chamber, has the general features of a truncated cone, and is used for the incineration of wastes.

~~{(38)}~~ (36) "Wood Waste Boiler" means equipment which uses indirect heat transfer from the products of combustion of wood waste to provide heat or power.

Stat. Auth.: ORS Ch. 468

Hist.: DEQ 4-1978, f.& ef.4-7-78; DEQ 9-1979, f.& ef. 5-3-79; DEQ 3-1980, f& ef. 1-28-80; DEQ 14-1981, f.& ef. 5-6-81; DEQ 22-1989, f.& cert.ef. 9-26-89

Wood Waste Boilers

340-30-015 (1) No person shall cause or permit the emission of particulate matter from any wood waste boiler with a heat input greater than 35 million BTU/hr in excess of 0.050 grain per dry standard cubic foot ~~{(1.4 grams per cubic meter)}~~ of exhaust gas, corrected to 12 percent carbon dioxide.

(2) No person owning or controlling any wood waste boiler with a heat input greater than 35 million BTU/hour shall cause or permit the emission of any air contaminant into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour equal to or greater than 10 percent opacity, unless the permittee demonstrates by source test that the emission limit in paragraph (1) of this section can be achieved at higher visible emissions ~~{in which case emissions shall not}~~, but in no case shall emissions equal or exceed [the visible air contaminant

~~limitations of section 340-21-015(2)}~~ 20% opacity for more than an aggregate of 3 minutes in any one hour. Specific opacity limits shall be included in the Air Contaminant Discharge Permit for each affected source.

(3) In accordance with the compliance schedule in 340-30-046(2), ~~[N]~~no person shall cause or permit the emission of particulate matter from any boiler with a heat input greater than 35 million Btu/hour unless the boiler has been equipped with emission control equipment which:

(a) Limits emissions of particulate matter to LAER as defined by the Department at the time the Department approves the control device; and

(b) Limits visible emissions such that their opacity does not exceed 5% for more than an aggregate of 3 minutes in any one hour, unless the permittee demonstrates by source test that emissions can be limited to LAER at higher visible emissions [in which case emissions shall not], but in no case shall emissions equal or exceed [the visible air contaminant limitations of section 340-30-015(2)] 10% opacity for more than an aggregate of 3 minutes in any one hour. Specific opacity limits shall be included in the Air Contaminant Discharge Permit for each affected source.

(c) For purposes of OAR 340-20-265~~{(3)}~~ and 340-20-310~~{(b)}~~, the boiler mass emission limits shall be based on particulate matter emissions of 0.030 grains per standard dry cubic foot, corrected to 12% CO₂.

Stat. Auth.: ORS Ch. 468

Hist.: DEQ 4-1978, f. & ef. 4-7-78; DEQ 29-1980, f. & ef. 10-29-80; DEQ 14-1986, f. & ef. 6-20-86; DEQ 22-1989, f. & cert.ef. 9-26-89

Veneer Dryer Emission Limitations

340-30-021 (1) No person shall operate any veneer dryer such that visible air contaminants emitted from any dryer stack or emission point exceed the opacity limits specified in subsections (a) and (b) or such that emissions of particulate matter exceed the mass emission limits of subsections (c) through (g):

~~{(a)-A design opacity of 5%;}~~

~~{(b)}~~ (a) An average operating opacity of 5%; and

~~{(c)}~~ (b) A maximum opacity of 10%, unless the permittee demonstrates by source test that the emission limits in ~~{(1)-(d) through-(g)}~~ subsections (c) through (g) can be achieved at higher visible emissions than specified in ~~{subsections-(1)-(a) through-(e)}~~ subsections (a) and (b), but in no case shall emissions [in which case the emissions shall not] exceed the visible air contaminant limitations of section 340-25-315(1)(b). Specific opacity limits shall be included in the Air Contaminant Discharge Permit for each affected source. ~~{Where the presence of~~

~~uncombined water is the only reason for the failure to meet the above requirements,--said requirements shall not apply.--~~

~~{(d)}~~(c) 0.30 pounds per 1,000 square feet of veneer dried (3/8" basis) for direct natural gas or propane fired veneer dryers;

~~{(e)}~~(d) 0.30 pounds per 1,000 square feet of veneer dried (3/8" basis) for steam heated veneer dryers;

~~{(f)}~~(e) 0.40 pounds per 1,000 square feet of veneer dried (3/8" basis) for direct wood fired veneer dryers using fuel which has a moisture content by weight less than 20%;

~~{(g)}~~(f) 0.45 pounds per 1,000 square feet of veneer dried (3/8" basis) for direct wood fired veneer dryers using fuel which has a moisture content by weight greater than 20%;

~~{(h)}~~(g) In addition to ~~{paragraphs (1)(f) and (g) of this section}~~ subsections (e) and (f), 0.20 pounds per 1,000 pounds of steam generated from combustion exhaust gases vented to the veneer dryer.

(2) Exhaust gases from fuel-burning equipment vented to the veneer dryer are exempt from OAR 340-21-020.

~~{(2)}~~ (3) No person shall operate a veneer dryer unless:

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

(b) The veneer dryer is equipped with an emission control system which has been approved in writing by the Department and is capable of complying with subsections (1) ~~{(b) and (c)}~~ (a) through (g); or

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

~~{(3)}~~ (4) Each veneer dryer shall be maintained and operated at all times such that air contaminant generating processes and all contaminant control equipment shall be at full efficiency and effectiveness so that the emission of air contaminants is kept at the lowest practicable levels.

~~{(4)}~~ (5) No person shall willfully cause or permit the installation or use of any means, such as dilution, which, without resulting in a reduction in the total amount of air contaminants emitted, conceals an emission which would otherwise violate this rule.

~~{(5)}~~ (6) Where effective measures are not taken to minimize fugitive emissions, the Department may require that the equipment or structures in which processing, handling and storage are done, be tightly closed, modified, or operated in such a way that air contaminants are minimized, controlled, or removed before discharge to the open air.

~~{(6)}~~ Compliance with the visible emission limits in section (1) of this rule shall be determined in accordance with the

**New Industrial PM₁₀ Emission Standard
Rules and Other House-Keeping Measures**

**Attachment A
(Part 3)**

~~Department's Method 9 on file with the Department as of November
16, 1979.~~

Stat. Auth.: ORS Ch 468
Hist.: DEQ 22-1989, f. & cert.ef.9-26-89

Air Conveying Systems (Medford-Ashland AQMA Only)

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

Stat. Auth.: ORS Ch. 468
Hist.: DEQ 4-1978. f. & ef.4-7-78; DEQ 22-1989, f. & cert.ef.9-26-89

Wood Particle Dryers at Particleboard Plants

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

(2) No person shall cause or permit the visible emissions from the wood particle dryers at a particleboard plant to exceed 10% opacity for more than an aggregate of 3 minutes in any one hour, unless the permittee demonstrates by source test that the particulate matter emission limit in section (1) can be achieved at higher visible emissions, but in no case shall emissions equal or exceed 20% opacity for more than an aggregate of 3 minutes in any one hour. Specific opacity limits shall be included in the Air Contaminant Discharge Permit for each affected source.

Stat. Auth.: ORS Ch. 468
Hist.: DEQ 4-1978, f. & ef.4-7-78; DEQ 14-1981, f. & ef.5-6-81; DEQ 14-1986, f. & ef. 6-20-86

Hardboard Manufacturing Plants

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

Stat. Auth.: ORS Ch. 468
Hist.: DEQ 14-1981, f. & ef.5-6-81; DEQ 14-1986, f. & ef. 6-20-86

Wigwam Waste Burners

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

Stat. Auth.: ORS Ch. 468

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

Charcoal Producing Plants

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

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

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

Stat. Auth.: ORS Ch. 468

Hist.: DEQ 4-1978, f. & ef.4-7-78; DEQ 14-1986, f. & ef. 6-20-86; DEQ 22-1989, f. & cert.ef. 9-26-89

Control of Fugitive Emissions (Medford-Ashland AQMA Only)

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

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

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

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

**New Industrial PM₁₀ Emission Standard
Rules and Other House-Keeping Measures**

**Attachment A
(Part 3)**

- (c) Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials;
- (d) Adequate containment during sandblasting or other similar operations;
- (e) Covering, at all times when in motion, open bodied trucks transporting materials likely to become airborne; and
- (f) Procedures for the prompt removal from paved streets of earth or other material which does or may become airborne.

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

Stat. Auth.: ORS Ch. 468
Hist.: DEQ 6-1983, f. & ef. 4-18-83; DEQ 22-1989, f. & cert.ef. 9-26-89

Requirement for Operation and Maintenance Plans (Medford-Ashland AOMA Only)

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

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

- (a) Reduce the number of upsets and breakdown in particulate control equipment;
- (b) Reduce the duration of upsets and downtimes; and
- (c) Improve the efficiency of control equipment during normal operations.

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

- (a) Personnel training in operation and maintenance;
- (b) Preventative maintenance procedures, schedule and records;
- (c) Logging of the occurrence and duration of all upsets, breakdowns and malfunctions which result in excessive emissions;
- (d) Routine follow-up evaluation upsets to identify the cause of the problem and changes needed to prevent a recurrence;
- (e) Periodic source testing of pollution control units as required by air contaminant discharge permits;
- (f) Inspection of internal wear points of pollution control equipment during scheduled shutdowns; and
- (g) Inventory of key spare parts.

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

**New Industrial PM₁₀ Emission Standard
Rules and Other House-Keeping Measures**

**Attachment A
(Part 3)**

Stat. Auth.: ORS Ch. 468
Hist.: DEQ 6-1983, f. & ef.4-18-83; DEQ 22-1989, f.& cert.ef.
9-26-89

**Compliance Schedules
340-30-045**

Stat. Auth. ORS Ch. 468
Hist.: [DEQ 4-1978, f. & ef.4-7-78; DEQ 27-1980 f. & ef.10-
29-80; DEQ 14-1981, f. & ef.5-6-81; DEQ 6-1983, f. & ef.4-
18-83; Repealed by DEQ 22-89, f.& cert.ef. 9-26-89]

Emission-Limits Compliance Schedules

340-30-046 (1) Compliance with the emission limits for wood-waste boilers in the Grants Pass area and veneer dryers established in sections OAR 340-30-015(1) and (2) and OAR 340-30-02[0] shall be provided according to the following schedules:

(a) Within three months of the effective date of these rules, submit Design Criteria and a Notice of Intent to Construct for emission control systems for Department review and approval;

(b) Within three months of receiving the Department's approval of the Design Criteria, submit a General Arrangement and copies of purchase orders for the emission-control devices;

(c) Within two months of placing purchase orders for emission-control devices, submit vendor drawings as approved for construction of the emission-control devices and specifications of other major equipment in the emission-control system (such as fans, scrubber-medium recirculation and make up systems) in sufficient detail to demonstrate that the requirements of the Design Criteria will be satisfied;

(d) Within one year of receiving the Department's approval of Design Criteria, complete construction;

(e) Within fifteen months of receiving the Department's approval of Design Criteria, but no later than June 30, 1991, demonstrate compliance.

(2) Compliance with the emission limits for wood-waste boilers in section 340-30-015(3) shall be provided according to OAR 340-30-067 or the following schedule, whichever occurs first:

(a) By no later than September 1, 1993, submit Design Criteria and a Notice of Intent to Construct for emission control systems for Department review and approval;

(b) Within three months of receiving the Department's approval of the Design Criteria, submit a General Arrangement and copies of purchase orders for the emission-control devices;

(c) Within two months of placing purchase orders for emission-control devices, submit vendor drawings as approved for construction of the emission-control devices and specifications of other major equipment in the emission-control system (such as

fans, scrubber-medium recirculation and make up systems) in sufficient detail to demonstrate that the requirements of the Design Criteria will be satisfied;

(d) Within one year of receiving the Department's approval of Design Criteria, complete construction;

(e) Within fifteen months of receiving the Department's approval of Design Criteria, but no later than December 31, 1994, demonstrate compliance.

Stat. Auth.: ORS Ch. 468

Hist.: DEQ 22-1989, f. & cert. ef. 9-26-89

Continuous Monitoring

340-30-050 (1) The Department will require the installation and operation of instrumentation for measuring and recording emissions and/or the parameters which affect the emission of air contaminants from wood-waste fired boilers, veneer dryers, fiber dryers, and particle dryers to ensure that the sources and the air pollution control equipment are operated at all times at their full efficiency and effectiveness so that the emission of air contaminants is kept at the lowest practicable level. The instrumentation shall be periodically calibrated. The method and frequency of calibration shall be approved in writing by the Department. Continuous monitoring equipment and operation shall be in accordance with continuous emission monitoring systems guidance provided by the Department and shall be consistent, where applicable, with the EPA performance specifications and quality assurance procedures outlined in 40 CFR 60, Appendices B and F, and the Quality Assurance Handbook for Air Pollution Measurement Systems, Volume III. The recorded information shall be kept for a period of at least one year and shall be made available to the Department upon request. The selection, installation, and use of the instrumentation shall be done according to the following schedule:

(a) Within six months from the effective date of these rules, the persons responsible for the affected facilities shall submit to the Department a plan for process and/or emission monitoring. The Department's primary criterion for review and approval of the plans will be the ability of proposed instrumentation to demonstrate continuous compliance with these regulations.

(b) Within one year from the Department's approval of the plan(s), but no later than July 1, 1992, the persons responsible for the affected facilities shall purchase, install, place in operation the instrumentation as approved, verify that it is capable of demonstrating continuously the compliance status of the affected facilities, and commence continuous monitoring and reporting results to the Department, at a frequency and in a form agreed upon by the Department and the responsible persons.

(c) The implementation date in paragraph (1)(b) of this section can be extended up to one year, subject to Department approval, if justified by the persons responsible for the affected facilities based on unavailability of suitable equipment or other problems.

(2) At a minimum, the monitoring plan submitted under paragraph (1)(a) of this section shall include:

(a) Continuous monitoring and monthly reporting of carbon monoxide concentration[-] and oxygen concentration[-] for any wood-waste fired boiler with a heat input greater than 35 million BTU/hr or for any wood-waste boiler using a wet scrubber as pollution control equipment and steam production rate for any wood-waste fired boiler;

(b) Continuous monitoring and monthly reporting of pressure drop, scrubber water pressure, and scrubber water flow for any wood-waste fired boiler, veneer dryer, particle dryer, or fiber dryer using a wet scrubber as pollution control equipment;

(c) Continuous monitoring and monthly reporting of opacity for any wood-waste fired boiler not controlled by a wet scrubber; and

(d) Continuous availability by electronic means to the Department of the emission and performance data specified in paragraphs (2)(a) through (c) of this section for any wood-waste fired boiler subject to the emission requirements of OAR 340-30-015.

Stat. Auth.: ORS Ch. 468

Hist.: DEQ 4-1978, f. & ef. 4-7-78; DEQ 22-1989, f. & cert. ef. 9-26-89

Source Testing

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

(a) Wood Waste Boilers with heat input greater than 35 million BTU/hr -- Once every year;

(b) Veneer Dryers -- Once every year, during 1991, 1992, and 1993 and once every 3 years thereafter;

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

(d) Charcoal Producing Plants -- Once every year[-];

(e) Wood Waste Boilers with heat input equal to or less than 35 million BTU/hr with dry emission control equipment -- Once in 1992 and once every 3 years thereafter.

(2) Source testing shall begin at these frequencies within 90

**New Industrial PM₁₀ Emission Standard
Rules and Other House-Keeping Measures**

**Attachment A
(Part 3)**

days of the date by which compliance is to be achieved for each individual emission source.

(3) These source testing requirements shall remain in effect unless waived in writing by the Department because of adequate demonstration that the source is consistently operating at lowest practicable levels, or that continuous emission monitoring systems are producing equivalent information.

(4) Source tests on wood waste boilers shall not be performed during periods of soot blowing, grate cleaning, or other abnormal operating conditions. The steam production rate during the source test shall be considered the maximum permittee's steaming rate for the boiler.

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

Stat. Auth.: ORS Ch. 468
Hist.: DEQ 4-1978, f. & ef. 4-7-78; DEQ 14-1986, f. & ef. 6-20-86; DEQ 22-1988 f. & cert. ef. 9-26-89

Total Plant Site Emissions

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

New Sources

340-30-065 New sources shall be required to comply with rules 340-30-015(3) and 340-30-020 through 340-30-110 immediately upon initiation of operation.

Stat. Auth.: ORS Ch. 468
Hist.: DEQ 4-1978, f. & ef. 4-7-78; DEQ 22-1988, f. & cert. ef. 9-26-89

Rebuilt ~~[Sources]~~ Boilers

340-30-067 Rebuilt ~~[sources]~~ boilers shall immediately comply with the requirements of 340-30-015(3) except that in the Grants Pass Urban Growth Area this provision will apply to sources that are rebuilt after they have complied with 340-30-015(1).

Stat. Auth.: ORS 468
Hist.: DEQ 22-1988, f. & cert. ef. 9-26-89

**New Industrial PM₁₀ Emission Standard
Rules and Other House-Keeping Measures**

**Attachment A
(Part 3)**

Open Burning

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

Stat. Auth.: ORS Ch. 468

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

Emission Offsets

340-30-110

[DEQ 9-1979, f. & ef. 5-3-79;

Repealed by DEQ 25-1981, f. & ef. 9-8-81]

Emission Offsets

340-30-111 In the Medford-Ashland AQMA, emission offsets required in accordance with OAR 340-20-240 for new or modified sources shall provide reductions in emissions equal to 1.2 times the emission increase from the new or modified sources.

Stat. Auth.: ORS Ch. 468

Hist.: DEQ 22-1989, f. & cert.ef. 9-26-89

Part 4: House-keeping amendments to Ambient Standards;
Amendments to Division 31.

Suspended Particulate Matter

340-31-015 Concentrations of suspended particulate matter ~~[at a location meeting ambient air monitoring site criteria and]~~ in ambient air as measured by an approved method for total suspended particulate, (TSP), or by an approved method for the fraction of TSP which is equal to or less than 10 microns in aerodynamic diameter, (PM₁₀), shall not exceed:

(1) 60 micrograms of TSP per cubic meter of air as an annual geometric mean for any calendar year at any site.

(2) 150 micrograms of TSP per cubic meter of air as a 24 hour average concentration more than once per year at any site.

(3) 50 micrograms of PM₁₀ per cubic meter of air as an annual arithmetic mean. This standard is attained when the expected annual arithmetic mean concentration, as determined in accordance with Appendix K of 40 CFR 50 is less than or equal to 50 micrograms per cubic meter at any site.

(4) 150 micrograms of PM₁₀ per cubic meter of air as a 24-hour average concentration for any calendar year. This standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 micrograms per cubic meter as determined in accordance with Appendix K of 40 CFR 50 is equal to or less than one at any site.

[Publication: The publications referred to in this rule are available for inspection at the office of the Department of Environmental Quality.]

Stat. Auth.: ORS Ch. 468

Hist.: DEQ 37, f. 2-15-72, ef. 3-1-72; DEQ 8-1988, f. & cert. ef. 5-19-88 (corrected 9-30-88)

Sulfur Dioxide

340-31-020 Concentrations of sulfur dioxide in ambient air ~~[at a location meeting ambient air monitoring site criteria and]~~ as measured by an approved method shall not exceed:

(1) 0.02 ppm as an annual arithmetic mean for any calendar year at any site.

(2) 0.10 ppm as a 24-hour average concentration more than once per year at any site.

(3) 0.50 ppm as a 3-hour average concentration more than once per year at any site.

Stat. Auth.: ORS Ch. 468

Hist.: DEQ 37, f. 2-15-72, ef. 3-1-72; DEQ 8-1988, f. & cert. ef. 5-19-88 (corrected 9-30-88)

Carbon Monoxide

340-31-025 For comparison to the standard, averaged ambient concentrations of carbon monoxide shall be rounded the nearest integer in parts per million (ppm). Fractional parts of 0.5 or greater shall be rounded up. Concentrations of carbon monoxide in ambient air ~~[at-a-location-meeting-ambient-air-monitoring-site-criteria-and]~~ as measured by an approved method, shall not exceed:

(1) 9 ppm as an 8-hour average concentration more than once per year at any site.

(2) 35 ppm as a 1-hour average concentration more than once per year at any site.

Stat. Auth.: ORS Ch. 468

Hist.: DEQ 37, f. 2-15-72, ef. 3-1-72; DEQ 8-1988, f. & cert. ef. 5-19-88 (corrected 9-30-88)

Ozone

340-31-030 Concentrations of ozone in ambient air ~~[at-a-location-meeting-ambient-air-monitoring-site-criteria-and]~~ as measured by an approved method shall not exceed 0.12 ppm as a 1-hour average concentration. This standard is attained when, at any site the expected number of days per calendar year with maximum hourly concentrations greater than 0.12 ppm is equal to or less than one as determined by the method of Appendix H, 40 CFR 50.[9-]

[Publication: The publications referred to in this rule are available for inspection at the office of the Department of Environmental Quality.]

Stat. Auth.: ORS Ch. 468

Hist.: DEQ 37, f. 2-15-72, ef. 3-1-72; DEQ 15-1979, f. & ef. 6-22-79; DEQ 7-1980, f. & ef. 3-5-80; DEQ 4-1982, f. & ef. 1-29-82; DEQ 8-1988, f. & cert. ef. 5-19-88 (corrected 9-30-88)

Nitrogen Dioxide

340-31-040 Concentrations of nitrogen dioxide in ambient air ~~[at-a-location-meeting-ambient-air-monitoring-site-criteria-and]~~ as measured by an approved method shall not exceed 0.053 ppm as an annual arithmetic mean at any site.

Stat. Auth.: ORS Ch. 468

Hist.: DEQ 37, f. 2-15-72, ef. 3-1-72; DEQ 8-1988, f. & cert. ef. 5-19-88 (corrected 9-30-88)

New Industrial PM₁₀ Emission Standard
Rules and Other House-Keeping Measures

Attachment A
(Part 4)

Ambient Air Quality Standard for Lead

340-31-055 The lead concentration in ambient air as measured by an approved method [~~at-a-location-meeting-ambient-air monitoring-site-criteria,~~] shall not exceed 1.5 micrograms per cubic meter as an arithmetic average concentration of all samples collected at [~~that-location~~] any site during any one calendar quarter.

Stat. Auth.: ORS Ch. 468

Hist.: DEQ 85, f. 1-29-75, ef. 2-25-75; DEQ 1-1983, f. & ef. 1-21-83; DEQ 8-1988, f. & cert. ef. 5-19-88 (corrected 9-30-88)

ADG:MLH:LDB:DKN
RPT\AH15026
(8/15/91)

**RULEMAKING STATEMENTS FOR PROPOSED NEW INDUSTRIAL PM₁₀
EMISSION STANDARD RULES AND OTHER HOUSE-KEEPING MEASURES**

STATEMENT OF NEED FOR RULEMAKING

Pursuant to ORS 183.335(7), this statement provides information on the intended action to amend a rule.

(1) Legal Authority

This proposal amends Oregon Administrative Rules (OAR) 340, Divisions 21, 25, 30 and 31. It is proposed under authority of Oregon Revised Statutes (ORS) Chapter 468.

(2) Need for these Rules

The federal Clean Air Act Amendments of 1990 require that states adopt State Implementation Plan (SIP) revisions to assure that areas which violate the PM₁₀ health and welfare standards are brought into attainment with those standards within prescribed time frames. The revisions must be submitted to the U.S. Environmental Protection Agency (EPA) by November 15, 1991, or the state will face serious federal sanctions. The SIP must be based on a foundation of rules that implement all requirements of the Clean Air Act and are approved by EPA as federally enforceable. The new and revised rules in this proposal are required to ensure that the PM₁₀ SIP revisions are approvable by EPA.

Part 1 of these rules would establish contingency control requirements for industrial sources in PM₁₀ nonattainment areas. The Clean Air Act requires that the SIP revisions include such contingency measures which go into effect without further action by the state if an area fails to meet the attainment date. Parts 2 through 4 of these rules contain a number of house-keeping amendments which are required to obtain EPA approval of the SIP. These amendments include revisions in definitions, citations, and format needed to make the requirements consistent with EPA rules.

(3) Principal Documents Relied Upon

- o Federal Clean Air Act Amendments of 1990, PL 101-549, November 15, 1990.
- o Staff report to the Environmental Quality Commission, April 1, 1977, Agenda Item E, regarding Veneer Dryer Rules.
- o Staff report to the Environmental Quality Commission, April 1, 1979, Agenda Item F3, regarding Veneer Dryer Rules.

- o Staff report to the Environmental Quality Commission, July 19, 1985, Agenda Item I, regarding Veneer Dryer Rules.
- o Staff report to the Environmental Quality Commission, September 8, 1989, Agenda Item E, regarding Medford-Ashland and Grants Pass Industrial Rules.
- o Staff report to the Environmental Quality Commission, April 26, 1991, Agenda Item G, regarding Small Wood-fired Boilers.
- o Staff report to the Environmental Quality Commission, April 29, 1988, Agenda Item L, regarding Ambient Air Quality Standards.
- o Correspondence from the U.S. Environmental Protection Agency regarding rule deficiencies (Attachment G).

All documents referenced may be inspected at the Department of Environmental Quality, Air Quality Division, 811 S.W. 6th Avenue, Portland, Oregon, during normal business hours.

LAND USE CONSISTENCY STATEMENT

The proposed rule changes appear to affect land use as defined in the Department's coordination program with the Department of Land Conservation and Development (DLCD), but appear to be consistent with the Statewide Planning Goals.

With regard to Goal 6, (air, water, and land resources quality), the proposed changes are designed to enhance and preserve air quality in the State and are considered consistent with the Goal. The proposed rule changes do not appear to conflict with the other Goals.

Public comment on any land use issue involved is welcome and may be submitted in the same fashion as indicated for other testimony on these rules.

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 DLCD to mediate any appropriate conflicts brought to our attention by local, state, or federal authorities.

ADG/MLH
RPT\AH15027
(8/12/91)

FISCAL AND ECONOMIC IMPACT STATEMENT
FOR PROPOSED NEW INDUSTRIAL PM₁₀ EMISSION STANDARD
RULES AND OTHER RELATED HOUSEKEEPING MEASURES

PROPOSAL SUMMARY

The proposed rules would:

- o Establish contingency emission standards for industrial sources in PM₁₀ nonattainment areas to be implemented upon failure of the area to attain the ambient air quality standard for PM₁₀ by the attainment date.
- o Make housekeeping changes to clarify statewide industrial rules applicable to veneer dryers, including those in PM₁₀ nonattainment areas to ensure that they are fully approvable by the U.S. Environmental Protection Agency (EPA).
- o Make housekeeping changes to special PM₁₀ control rules in the Medford-Ashland and Grants Pass areas to ensure that they are fully approvable by EPA.
- o Make housekeeping changes in the area of applicability of PM₁₀ and other ambient air quality standards to ensure that they are fully approvable by EPA.

COSTS TO OWNERS OF INDUSTRIAL PM₁₀ SOURCES

Part 1: Industrial Contingency Requirements for PM₁₀
Nonattainment areas.

The proposed rules would establish new emission standards for industrial sources in PM₁₀ nonattainment areas which fail to meet the attainment deadline. The proposed rules will only result in costs to owners of industrial PM₁₀ sources in the event the area the source is located in fails to meet the attainment deadline. The proposed rules would establish a uniform level of control in all areas that miss the attainment date, but because of varying levels of existing controls, the cost will vary by area.

All industrial sources affected by this rule are wood processing facilities. In the nonattainment area which would be least financially impacted by these rules, Grants Pass, the total capital cost to the four major industries is estimated at about \$500,000. Large boilers and veneer dryers in Grants Pass are currently regulated to the degree of control proposed in the contingency rules.

In Klamath Falls, the nonattainment area which would be most financially impacted by these industrial contingency rules, the four major wood processing plants could experience capital costs of \$4-5 million. If Weyerhaeuser Company becomes subject to the total contingency control measures the Klamath Falls industrial costs would increase to an estimated \$12-15 million.

Ten wood products plants and the single charcoal manufacturing facility in Medford-Ashland would need emission controls to comply with the proposed standards according to Department records. The capital cost to industry in this area is estimated to be in the range of \$2-3 million. Most large emission sources in the area will have emission abatement in place prior to the earliest possible implementation of the proposed contingency standards. The single industrial source affected by these rules in the La Grande nonattainment area could bear capital costs of about \$1 million to install emission controls on their existing boilers. However, plans are already underway to install a new boiler by the end of 1992 which could meet the standards of this rule.

Installing emission controls on boilers would be in the order of \$800,000 at each of the three wood products plants in Klamath Falls and an additional \$4.5-5.5 million if Weyerhaeuser's boilers require emission control. Operation and maintenance costs of boiler emission controls is estimated by the Department to be in neighborhood of \$30,000 per year for each of the smaller operations and upwards of \$180,000 per year for Weyerhaeuser.

Capital costs for veneer dryer emission control would be in the \$250,000 to \$350,000 range for each of the three units likely needing control in the Klamath Falls area. Annual operation and maintenance is estimated at about \$40,000 per year at each of the two affected plywood plants.

Press/cooling vent control and wood particle dryer control is roughly estimated at \$300-500,000 for each of the three potential facilities to be controlled.

Capital expenditures for air conveying systems emission abatement would be necessary in each area that is impacted by implementation of these rules. Installing a bagfilter on one system typically would cost \$90,000. The Department estimates air conveying system emission control costs in the Medford-Ashland area could exceed \$1.3 million. For Weyerhaeuser to control the 42 cyclone emission points that currently are permitted for greater than 3 tons of particulate emissions is expected to be in the \$3-4 million range. Operation and maintenance of a bagfilter to control cyclone emissions generally range from \$4,000 to \$8,000 depending on factors such as size, power consumption and fire protection equipment installed.

The cost of implementing the proposed plant site fugitive emission plan is site specific and the range of cost potential is broad. Capital costs could be \$50,000-150,000 for each operation. Industries in each area, except for Medford-Ashland which is already governed by this regulation, would be impacted.

The industrial contingency emission standards as proposed could have a fiscal impact on small businesses. The Department has identified one such source in the Medford-Ashland AQMA which may need to provide emission controls on an air conveying system.

The following table provides a summary of approximate total cost to industrial sources for each nonattainment area. Estimated capital costs, operation and maintenance costs and the annualized cost amortized over a 15 year period at 10% interest are listed.

	<u>Costs in Millions of Dollars</u>				
	<u>Medford-Ashland</u>	<u>Grants Pass</u>	<u>Klamath Falls W/O Weyeh.</u>	<u>Klamath Falls W/Weyeh.</u>	<u>La Grande</u>
Capital	2 - 3	0.4-0.6	4 - 5	12 - 15	0.8 - 1
Op. & maint	0.16	0.02	0.2	0.7	0.05
Annualized	0.4-0.6	0.06-0.09	0.6-0.9	2.3-2.7	0.01-0.02

The fiscal and economic impact on industry in the Eugene-Springfield nonattainment area will be provided in the attainment strategy developed by Lane Regional Air Pollution Authority.

- Part 2: Housekeeping Amendments to Statewide Veneer Dryer Rules
- Part 3: Housekeeping Amendments to Medford-Ashland and Grants Pass Rules
- Part 4: Housekeeping Amendments to Ambient Standards

The proposed rules in Parts 2, 3 and 4 do not impose any new requirements and will not result in any increased costs to the regulated community, including small business.

COSTS TO THE DEPARTMENT OF ENVIRONMENTAL QUALITY

The new industrial contingency requirements, if an area fails to meet the December 31, 1994, or later deadlines of the Clean Air Act, would require additional plan reviews, permit modifications, inspections, and other compliance assurance activities by Department of Environmental Quality staff. This additional work could require additional staff which would need to be supported by increased permit fees and possibly additional federal or state funding.

ADG:DKN:MLH
 RTP\AH15028
 (8/14/91)

NOTICE OF PUBLIC HEARING

Hearing Dates: September 26,
27, 30 & October
1, 1991

Comments Due: October 2, 1991

WHO IS AFFECTED:

Individuals, especially those with woodstoves, and board product industries statewide, local governments, agricultural operations and industries in or near the Medford-Ashland, Klamath Falls, Grants Pass and La Grande PM₁₀ Nonattainment Areas.

WHAT IS PROPOSED:

The Department of Environmental Quality is proposing to amend OAR 340-20-047, the State of Oregon Clean Air Act Implementation Plan to:

- o Revise fine particulate (PM₁₀) Pollution Control Strategies for the Medford, Grants Pass and Klamath Falls areas;
- o Add a new PM₁₀ Control Strategy for the La Grande area;
- o Add new regulations for woodstoves, OAR Chapter 340, Division 34;
- o Add new contingency industrial particulate emission standards for PM₁₀ nonattainment areas, OAR Chapter 340, Division 21;
- o Revise the Medford/Grants Pass Particulate Standard Rules, OAR Chapter 340, Division 30;
- o Revise Board Products Particulate Emission Standard Rules, OAR Chapter 340, Division 25;
- o Revise Ambient Air Standard Rules, OAR Chapter 340, Division 31;
- o Revise Rogue Basin Open Burning Control Area rules, OAR Chapter 340, Division 23.

WHAT ARE THE HIGHLIGHTS:

The federal Clean Air Act requires states to submit PM₁₀ attainment Control Strategies for PM₁₀ Nonattainment Areas to the U.S. Environmental Protection Agency (EPA) by November 15, 1991. The Control Strategies specify how federal PM₁₀ air quality standards will be attained by the Act's deadline of December 31, 1994. They primarily rely on controlling PM₁₀ emissions from residential woodheating, industry and open burning.

ATTACHMENT D

The proposed rules which would implement PM₁₀ Control Strategies will:

- o Regulate residential woodheating according to new legislative authority including:
 - > Banning the sale of used, uncertified woodstoves statewide;
 - > allowing DEQ to prohibit woodheating on poor air quality days if local governments fail to adopt or implement such programs where needed;
 - > Requiring the destruction of uncertified woodstoves upon the sale of a home as a contingency measure if an area fails to attain compliance with the PM₁₀ standard by December 31, 1994.
- o Require industries in PM₁₀ nonattainment areas to meet Reasonably Available and Best Available Control Technology requirements of the Clean Air Act as a contingency measure if areas fail to attain compliance with the PM₁₀ standard by the Clean Air Act deadline.
- o Require tighter meteorological criteria for allowing open burning in the Rogue Basin Open Burning Control Area, and ban open burning from November through February in this area as a contingency if it fails to attain compliance with the PM₁₀ standard by the Clean Air Act deadline.
- o Address housekeeping/enforceability issues raised by EPA with respect to existing state regulations covering the Board Products Industry, Medford/Grants Pass Industrial Particulate Emission and Ambient Air Standards.

HOW TO COMMENT:

Copies of the complete proposed rule packages may be obtained from the Air Quality Division at 811 S.W. Sixth Avenue, Portland, OR 97204, or the regional office nearest you. For further information, call toll free 1-800-452-4011 (in Oregon), or contact:

Merlyn Hough at (503) 229-6446 (Medford-Ashland)
John Core at (503) 229-5380 (Klamath Falls)
Howard Harris at (503) 229-6086 (Grants Pass)
Brian Finneran at (503) 229-6278 (La Grande)
Andy Ginsburg at (503) 229-5581 (Industry)
David Collier at (503) 229-5177 (Woodstoves)

ATTACHMENT D

Public hearings will be held before a hearings officer at:

7:00 pm
September 26, 1991
Commission Hearing Room
Courthouse Annex
Klamath Falls, Oregon

7:00 pm
September 30, 1991
Smullin Center Auditorium
Rogue Valley Medical Ctr.
Medford, Oregon

7:00 pm
September 27, 1991
City Council Chambers
101 NW "A" Street
Grants Pass, Oregon

7:00 pm
October 1, 1991
City Hall
1000 Adams Avenue
La Grande, Oregon

3:00 pm
October 1, 1991
DEQ Offices
811 SW Sixth Avenue
Portland, Oregon

Oral and written comments will be accepted at the public hearings. Written comments may be sent to the DEQ, but must be received no later than 5 pm, October 2, 1991.

WHAT IS THE NEXT STEP:

After public hearings, the Environmental Quality Commission may adopt rule amendments and Control Strategies identical to the proposed amendments, adopt modified rule amendments and Control Strategies on the same subject matter, or decline to act. The adopted rules and Control Strategies will be submitted to the EPA as part of the State Clean Air Act Implementation Plan. The Commission's deliberation should come on November 7, 1991, 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.

YM:a
RPT\AH15041
(8/14/91)

GENERAL ADMINISTRATION

468.005 Definitions. As used in ORS 448.305, 454.010 to 454.040, 454.205 to 454.255, 454.405, 454.425, 454.505 to 454.535, 454.605 to 454.745 and this chapter, unless the context requires otherwise:

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

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

(3) "Director" means the Director of the Department of Environmental Quality.

(4) "Order" has the same meaning as given in ORS 183.310.

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

(6) "Rule" has the same meaning as given in ORS 183.310.

(7) "Standard" or "standards" means such measure of quality or purity for air or for any waters in relation to their reasonable or necessary use as may be established by the commission pursuant to ORS 448.305, 454.010 to 454.040, 454.205 to 454.255, 454.405, 454.425, 454.505 to 454.535, 454.605 to 454.745 and this chapter. [Formerly 449.001]

468.010 Environmental Quality Commission; appointment; confirmation; term; compensation and expenses. (1) There is created an Environmental Quality Commission. The commission shall consist of five members, appointed by the Governor, subject to confirmation by the Senate as provided in ORS 171.562 and 171.565.

(2) The term of office of a member shall be four years, but the members of the commission may be removed by the Governor. Before the expiration of the term of a member, the Governor shall appoint a successor to assume the duties of the member on July 1 next following. A member shall be eligible for reappointment, but no member shall serve more than two consecutive terms. In case of a vacancy for any cause, the Governor shall make an appointment to become immediately effective for the unexpired term.

(3) A member of the commission is entitled to compensation and expenses as provided in ORS 292.195. [Formerly 449.010]

468.015 Functions of commission. It is the function of the commission to establish the policies for the operation of the department in a manner consistent with the policies and purposes of ORS 448.305, 454.010 to 454.040, 454.205 to 454.255, 454.405, 454.425, 454.505 to 454.535, 454.605 to 454.745 and this

Attachment E

chapter. In addition, the commission shall perform any other duty vested in it by law. [1973 c.83 §4]

468.020 Rules and standards. (1) In accordance with the applicable provisions of ORS 183.310 to 183.550, the commission shall adopt such rules and standards as it considers necessary and proper in performing the functions vested by law in the commission.

(2) Except as provided in ORS 183.335 (5), the commission shall cause a public hearing to be held on any proposed rule or standard prior to its adoption. The hearing may be before the commission, any designated member thereof or any person designated by and acting for the commission. [Formerly 449.173; 1977 c.38 §1]

468.030 Department of Environmental Quality. There is hereby established in the executive-administrative branch of the government of the state under the Environmental Quality Commission a department to be known as the Department of Environmental Quality. The department shall consist of the director of the department and all personnel employed in the department. [Formerly 449.032]

468.035 Functions of department. (1) Subject to policy direction by the commission, the department:

(a) Shall encourage voluntary cooperation by the people, municipalities, counties, industries, agriculture, and other pursuits, in restoring and preserving the quality and purity of the air and the waters of the state in accordance with rules and standards established by the commission.

(b) May conduct and prepare, independently or in cooperation with others, studies, investigations, research and programs pertaining to the quality and purity of the air or the waters of the state and to the treatment and disposal of wastes.

(c) Shall advise, consult, and cooperate with other agencies of the state, political subdivisions, other states or the Federal Government, in respect to any proceedings and all matters pertaining to control of air or water pollution or for the formation and submission to the legislature of interstate pollution control compacts or agreements.

(d) May employ personnel, including specialists, consultants and hearing officers, purchase materials and supplies, and enter into contracts necessary to carry out the purposes set forth in ORS 448.305, 454.010 to 454.040, 454.205 to 454.255, 454.405, 454.425, 454.505 to 454.535, 454.605 to 454.745 and this chapter.

(e) Shall conduct and supervise programs of air and water pollution control education, including the preparation and distribution of

more air contaminants which contribute to a condition of air pollution.

(4) "Air contamination source" means any source at, from, or by reason of which there is emitted into the atmosphere any air contaminant, regardless of who the person may be who owns or operates the building, premises or other property in, at or on which such source is located, or the facility, equipment or other property by which the emission is caused or from which the emission comes.

(5) "Air pollution" means the presence in the outdoor atmosphere of one or more air contaminants, or any combination thereof, in sufficient quantities and of such characteristics and of a duration as are or are likely to be injurious to public welfare, to the health of human, plant or animal life or to property or to interfere unreasonably with enjoyment of life and property throughout such area of the state as shall be affected thereby.

(6) "Area of the state" means any city or county or portion thereof or other geographical area of the state as may be designated by the commission.

(7) "Woodstove" means a wood fired appliance with a closed fire chamber which maintains an air-to-fuel ratio of less than 30 during the burning of 90 percent or more of the fuel mass consumed in the low firing cycle. The low firing cycle means less than or equal to 25 percent of the maximum burn rate achieved with doors closed or the minimum burn achievable. [Formerly 449.760; 1983 c.333 §1]

468.280 Policy. (1) In the interest of the public health and welfare of the people, it is declared to be the public policy of the State of Oregon:

(a) To restore and maintain the quality of the air resources of the state in a condition as free from air pollution as is practicable, consistent with the overall public welfare of the state.

(b) To provide for a coordinated statewide program of air quality control and to allocate between the state and the units of local government responsibility for such control.

(c) To facilitate cooperation among units of local government in establishing and supporting air quality control programs.

(2) The program for the control of air pollution in this state shall be undertaken in a progressive manner, and each of its successive objectives shall be sought to be accomplished by cooperation and conciliation among all the parties concerned. [Formerly 449.765]

468.285 Purpose. It is the purpose of the air pollution laws contained in ORS 448.305, 454.010 to 454.040, 454.205 to 454.255, 454.405, 454.425, 454.505 to 454.535, 454.605 to 454.745 and this chapter to safeguard the air resources of the state by controlling, abating and preventing air pollution under a program which shall be consistent with the declaration of policy in this section and with ORS 468.280. [Formerly 449.770]

468.290 Application of air pollution laws. Except as provided in this section and in ORS 468.450, 476.380 and 478.960, the air pollution laws contained in this chapter do not apply to:

(1) Agricultural operations and the growing or harvesting of crops and the raising of fowls or animals, except field burning which shall be subject to regulation pursuant to ORS 468.140, 468.150, 468.455 to 468.480 and this section;

(2) Use of equipment in agricultural operations in the growth of crops or the raising of fowls or animals, except field burning which shall be subject to regulation pursuant to ORS 468.140, 468.150, 468.455 to 468.480 and this section;

(3) Barbecue equipment used in connection with any residence;

(4) Agricultural land clearing operations or land grading;

(5) Heating equipment in or used in connection with residences used exclusively as dwellings for not more than four families, except woodstoves which shall be subject to regulation under this section and ORS 468.630 to 468.655;

(6) Fires set or permitted by any public agency when such fire is set or permitted in the performance of its official duty for the purpose of weed abatement, prevention or elimination of a fire hazard, or instruction of employees in the methods of fire fighting, which in the opinion of the agency is necessary;

(7) Fires set pursuant to permit for the purpose of instruction of employees of private industrial concerns in methods of fire fighting, or for civil defense instruction; or

(8) The propagation and raising of nursery stock, except boilers used in connection with the propagation and raising of nursery stock. [Formerly 449.775; 1975 c.559 §3; 1983 c.333 §2; 1983 c.730 §3]

468.295 Air purity standards; air quality standards. (1) By rule the commission may establish areas of the state and prescribe the degree of air pollution or air contamination that may be permitted therein, as air purity standards for such areas.

(2) in determining air purity standards, the commission shall consider the following factors:

(a) The quality or characteristics of air contaminants or the duration of their presence in the atmosphere which may cause air pollution in the particular area of the state;

(b) Existing physical conditions and topography;

(c) Prevailing wind directions and velocities;

(d) Temperatures and temperature inversion periods, humidity, and other atmospheric conditions;

(e) Possible chemical reactions between air contaminants or between such air contaminants and air gases, moisture or sunlight;

(f) The predominant character of development of the area of the state, such as residential, highly developed industrial area, commercial or other characteristics;

(g) Availability of air-cleaning devices;

(h) Economic feasibility of air-cleaning devices;

(i) Effect on normal human health of particular air contaminants;

(j) Effect on efficiency of industrial operation resulting from use of air-cleaning devices;

(k) Extent of danger to property in the area reasonably to be expected from any particular air contaminants;

(L) Interference with reasonable enjoyment of life by persons in the area which can reasonably be expected to be affected by the air contaminants;

(m) The volume of air contaminants emitted from a particular class of air contamination source;

(n) The economic and industrial development of the state and continuance of public enjoyment of the state's natural resources; and

(o) Other factors which the commission may find applicable.

(3) The commission may establish air quality standards including emission standards for the entire state or an area of the state. The standards shall set forth the maximum amount of air pollution permissible in various categories of air contaminants and may differentiate between different areas of the state, different air contaminants and different air contamination sources or classes thereof. [Formerly 449.785]

468.300 When liability for violation not applicable. The several liabilities which may be imposed pursuant to ORS 448.305, 454.010

to 454.040, 454.205 to 454.255, 454.405, 454.425, 454.505 to 454.535, 454.605 to 454.745 and this chapter upon persons violating the provisions of any rule, standard or order of the commission pertaining to air pollution shall not be so construed as to include any violation which was caused by an act of God, war, strife, riot or other condition as to which any negligence or wilful misconduct on the part of such person was not the proximate cause. [Formerly 449.825]

468.305 General comprehensive plan. Subject to policy direction by the commission, the department shall prepare and develop a general comprehensive plan for the control or abatement of existing air pollution and for the control or prevention of new air pollution in any area of the state in which air pollution is found already existing or in danger of existing. The plan shall recognize varying requirements for different areas of the state. [Formerly 449.782]

468.310 Permits. By rule the commission may require permits for air contamination sources classified by type of air contaminants, by type of air contamination source or by area of the state. The permits shall be issued as provided in ORS 468.065. [Formerly 449.727]

468.315 Activities prohibited without permit; limit on activities with permit. (1) Without first obtaining a permit pursuant to ORS 468.065, no person shall:

(a) Discharge, emit or allow to be discharged or emitted any air contaminant for which a permit is required under ORS 468.310 into the outdoor atmosphere from any air contamination source.

(b) Construct, install, establish, develop, modify, enlarge or operate any air contamination source for which a permit is required under ORS 468.310.

(2) No person shall increase in volume or strength discharges or emissions from any air contamination source for which a permit is required under ORS 468.310 in excess of the permissive discharges or emission specified under an existing permit. [Formerly 449.731]

468.320 Classification of air contamination sources; registration and reporting of sources. (1) By rule the commission may classify air contamination sources according to levels and types of emissions and other characteristics which cause or tend to cause or contribute to air pollution and may require registration or reporting or both for any such class or classes.

(2) Any person in control of an air contamination source of any class for which registration and reporting is required under subsection (1) of this section shall register

with the department and make reports containing such information as the commission by rule may require concerning location, size and height of air contaminant outlets, processes employed, fuels used and the amounts, nature and duration of air contaminant emissions and such other information as is relevant to air pollution. [Formerly 449.707]

468.325 Notice prior to construction of new sources; order authorizing or prohibiting construction; effect of no order; appeal. (1) The commission may require notice prior to the construction of new air contamination sources specified by class or classes in its rules or standards relating to air pollution.

(2) Within 30 days of receipt of such notice, the commission may require, as a condition precedent to approval of the construction, the submission of plans and specifications. After examination thereof, the commission may request corrections and revisions to the plans and specifications. The commission may also require any other information concerning air contaminant emissions as is necessary to determine whether the proposed construction is in accordance with the provisions of ORS 448.305, 454.010 to 454.040, 454.205 to 454.255, 454.405, 454.425, 454.505 to 454.535, 454.605 to 454.745 and this chapter and applicable rules or standards adopted pursuant thereto.

(3) If the commission determines that the proposed construction is in accordance with the provisions of ORS 448.305, 454.010 to 454.040, 454.205 to 454.255, 454.405, 454.425, 454.505 to 454.535, 454.605 to 454.745 and this chapter and applicable rules or standards adopted pursuant thereto, it shall enter an order approving such construction. If the commission determines that the construction does not comply with the provisions of ORS 448.305, 454.010 to 454.040, 454.205 to 454.255, 454.405, 454.425, 454.505 to 454.535, 454.605 to 454.745 and this chapter and applicable rules or standards adopted pursuant thereto, it shall notify the applicant and enter an order prohibiting the construction.

(4) If within 60 days of the receipt of plans, specifications or any subsequently requested revisions or corrections to the plans and specifications or any other information required pursuant to this section, the commission fails to issue an order, the failure shall be considered a determination that the construction may proceed. The construction must comply with the plans, specifications and any corrections or revisions thereto or other information, if any, previously submitted.

(5) Any person against whom the order is directed may, within 20 days from the date

of mailing of the order, demand a hearing. The demand shall be in writing, shall state the grounds for hearing and shall be mailed to the director of the department. The hearing shall be conducted pursuant to the applicable provisions of ORS 183.310 to 183.550.

(6) The commission may delegate its duties under subsections (2) to (4) of this section to the Director of the Department of Environmental Quality. If the commission delegates its duties under this section, any person against whom an order of the director is directed may demand a hearing before the commission as provided in subsection (5) of this section.

(7) For the purposes of this section, "construction" includes installation and establishment of new air contamination sources. Addition to or enlargement or replacement of an air contamination source, or any major alteration or modification therein that significantly affects the emission of air contaminants shall be considered as construction of a new air contamination source. [Formerly 449.712; 1985 c.275 §1]

468.330 Duty to comply with laws, rules and standards. Any person who complies with the provisions of ORS 468.325 and receives notification that construction may proceed in accordance therewith is not thereby relieved from complying with any other applicable law, rule or standard. [Formerly 449.730]

468.335 Furnishing copies of rules and standards to building permit issuing agencies. Whenever under the provisions of ORS 468.320 to 468.340 rules or standards are adopted by either the commission or a regional authority, the commission or regional authority shall furnish to all building permit issuing agencies within its jurisdiction copies of such rules and standards. [Formerly 449.720]

468.340 Measurement and testing of contamination sources. (1) Pursuant to rules adopted by the commission, the department shall establish a program for measurement and testing of contamination sources and may perform such sampling or testing or may require any person in control of an air contamination source to perform the sampling or testing, subject to the provisions of subsections (2) to (4) of this section. Whenever samples for air or air contaminants are taken by the department of analysis, a duplicate of the analytical report shall be furnished promptly to the person owning or operating the air contamination source.

(2) The department may require any person in control of an air contamination source to provide necessary holes in stacks or ducts and proper sampling and testing facilities, as may be necessary and reasonable for the ac-

curate determination of the nature, extent, quantity and degree of air contaminants which are emitted as the result of operation of the source.

(3) All sampling and testing shall be conducted in accordance with methods used by the department or equivalent methods of measurement acceptable to the department.

(4) All sampling and testing performed under this section shall be conducted in accordance with applicable safety rules and procedures established by law. [Formerly 449.702]

468.345 Variances from air contamination rules and standards; delegation to local governments; notices. (1) The commission may grant specific variances which may be limited in time from the particular requirements of any rule or standard to such specific persons or class of persons or such specific air contamination source, upon such conditions as it may consider necessary to protect the public health and welfare. The commission shall grant such specific variance only 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; 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.

(2) The commission may delegate the power to grant variances to legislative bodies of local units of government or regional air quality control authorities in any area of the state on such general conditions as it may find appropriate. However, if the commission delegates authority to grant variances to a regional authority, the commission shall not grant similar authority to any city or county within the territory of the regional authority.

(3) A copy of each variance granted, renewed or extended by a local governmental body or regional authority shall be filed with the commission within 15 days after it is granted. The commission shall review the variance and the reasons therefor within 60 days of receipt of the copy and may approve, deny or modify the variance terms. Failure of the commission to act on the variance within the 60-day period shall be considered a determination that the variance granted by

the local governmental body or regional authority is approved by the commission.

(4) In determining whether or not a variance shall be granted, the commission or the local governmental body or regional authority shall consider the equities involved and the advantages and disadvantages to residents and to the person conducting the activity for which the variance is sought.

(5) A variance may be revoked or modified by the grantor thereof after a public hearing held upon not less than 10 days' notice. Such notice shall be served upon all persons who the grantor knows will be subjected to greater restrictions if such variance is revoked or modified, or are likely to be affected or who have filed with such grantor a written request for such notification. [Formerly 449.310]

468.350 Air and water pollution control permit for geothermal well drilling and operation; enforcement authority of director. (1) Upon issuance of a permit pursuant to ORS 522.115, the director shall accept applications for such appropriate permits under air and water pollution control laws as are necessary for the drilling of a geothermal well for which the permit has been issued and shall, within 30 days, act upon such application.

(2) The director shall continue to exercise enforcement authority over a permit issued pursuant to this section; and shall have primary responsibility in carrying out the policy set forth in ORS 468.280, 468.710 and rules adopted pursuant to ORS 468.725, for air and water pollution control at geothermal wells which have been unlawfully abandoned, unlawfully suspended, or completed. [1975 c.352 §34]

468.355 Open burning of vegetative debris; local government authority. (1) The Environmental Quality Commission shall establish by rule periods during which open burning of vegetative debris from residential yard cleanup shall be allowed or disallowed based on daily air quality and meteorological conditions as determined by the department.

(2) After June 30, 1982, the commission may prohibit residential open burning in areas of the state if the commission finds:

(a) Such prohibition is necessary in the area affected to meet air quality standards; and

(b) Alternate disposal methods are reasonably available to a substantial majority of the population in the affected area.

(3)(a) Nothing in this section prevents a local government from taking any of the following actions if that governmental entity otherwise has the power to do so:

Proposed Contingency Particulate Emission Standards for Industrial Sources in the Medford-Ashland PM-10 Non-Attainment Area

Source	Units	Existing Standards	Proposed Contingency (2) Standards
Wood-Waste Boilers <35MM Btu input	gr/dscf opacity %	(1) 0.2/0.1 40	no change (3) 20
Wood-Waste Boilers >35MM Btu input	gr/dscf opacity %	0.030 10	no change no change
Plywood Plants	lb/ksq-ft opacity %	1 20	no change no change
Veneer dry--steam/gas	lb/ksq-ft opacity %	0.30 5/10	no change no change
Veneer dry--WF<20%(4)	lb/ksq-ft opacity %	0.40 5/10	no change no change
Veneer dry--WF>20%(4)	lb/ksq-ft opacity %	0.45 5/10	no change no change
Particleboard Plt.	lb/ksq-ft opacity %	3 20	no change no change
Wood dryers	lb/ksq-ft gr/dscf opacity	0.40 0.1 20	no change no change no change
Hardboard Plt. (5)	lb/ksq-ft opacity %	0.25 20	no change no change
Wood dryers	gr/dscf opacity	0.1 20	no change no change
Press/cooling vents(10)	lb/ksq-ft opacity	0.15 20	no change no change
Air conveying syst.(6)			
Air Convey =<10 T/Yr	gr/scf opacity %	0.2/0.1 20	--- ---
Air Convey >10 T/Yr	gr/scf % CE (8) opacity %	0.1 98.5 20	--- --- ---
Air Convey =<3 T/Yr	gr/scf opacity %	--- ---	0.10 20
Air Convey >3 T/Yr	gr/scf % CE (8) opacity %	--- --- ---	<0.005 (7) 98.5 20
Charcoal Plants	lb/ton char opacity %	10 20	5 20
Industrial sources listed in Note (9)	fugitives particulate	plan & implement	no change

Proposed Contingency Particulate Emission Standards---Industrial Sources

NOTES:

- (1) gr/dscf: Existing sources (prior to June 1, 1970)/ New sources (after June 1, 1970)
Veneer dryer opacity: Average operating opacity / Maximum opacity.
- (2) Proposed "contingency standard" meets both the Reasonably Available Control Technology (RACT) and the Best Available Control Technology (BACT) criterion.
- (3) Boilers >30 MM Btu input subject to NSPS must meet 0.056 gr/dscf.
- (4) WF<20% means direct wood-fired dryer, fuel <20% moisture (wet basis)
WF>20% means direct wood-fired dryer, fuel >20% moisture (wet basis)
- (5) Hardboard standard INCLUDES wood dryers, EXCLUDES press/cooling vents
- (6) "Air Conveying System" means an air moving device, such as a fan or blower, associated ductwork, cyclone or other collection device.
for moving material entrained in a moving airsteam.
- (7) Reference: 0.005 reflects minimum control achievable for bag filter.
- (8) "CE" means Control Efficiency of emission control device.
- (9) Large sawmills, all plywood mills and veneer manufacturing plants, particleboard and hardboard plants, charcoal manufacturing plants, stationary asphalt plants and stationary rock crushers (as described in OAR 340-20-155, Table 1).
- (10) This is not a regulation, but reflects emissions by test.

Proposed Contingency Particulate Emission Standards for Industrial Sources in the Grants Pass PM-10 Non-Attainment Area

Source	Units	Existing Standards	Proposed Contingency (2) Standards
		(1)	
Wood-Waste Boilers <35MM Btu input	gr/dscf opacity %	0.2/0.1 40	no change (3) 20
Wood-Waste Boilers >35MM Btu input	gr/dscf opacity %	0.030 10	no change no change
Plywood Plants	lb/ksq-ft opacity %	1 20	no change no change
Veneer dry--steam/gas	lb/ksq-ft opacity %	0.30 5/10	no change no change
Veneer dry--WF<20%(4)	lb/ksq-ft opacity %	0.40 5/10	no change no change
Veneer dry--WF>20%(4)	lb/ksq-ft opacity %	0.45 5/10	no change no change
Air conveying syst. (5)	gr/scf opacity %	0.2/0.1 20	--- ---
Air Convey =<3 T/Yr	gr/scf opacity %	--- ---	0.10 20
Air Convey >3 T/Yr	gr/scf % CE (6) opacity %	--- --- ---	<0.005 98.5 20
Industrial sources listed in Note (7)	fugitives particulate	---	plan & implement (8)

NOTES:

- (1) gr/dscf: Existing sources (prior to June 1, 1970)/ New sources (after June 1, 1970)
Veneer dryer opacity: Average operating opacity / Maximum opacity.
- (2) Proposed "contingency standard" meets both the Reasonably Available Control Technology (RACT) and the Best Available Control Technology (BACT) criterion.
- (3) Boilers >30 MM Btu input subject to NSPS must meet 0.056 gr/dscf.
- (4) WF<20% means direct wood-fired dryer, fuel <20% moisture (wet basis)
WF>20% means direct wood-fired dryer, fuel >20% moisture (wet basis)
- (5) "Air Conveying System" means an air moving device, such as a fan or blower, associated ductwork, cyclone or other collection device. for moving material entrained in a moving airsteam.
- (6) "CE" means Control Efficiency of emission control device.
- (7) Large sawmills, all plywood mills and veneer manufacturing plants, particleboard and hardboard plants, charcoal manufacturing plants, stationary asphalt plants and stationary rock crushers (as described in OAR 340-20-155, Table 1).
- (8) Fugitive emissions shall be controlled in accordance with a site-specific plan and implementation (see OAR 340-30-043(2) for detailed requirements).

Proposed Contingency Particulate Emission Standards for Industrial
Sources in PM-10 Non-Attainment Areas of
La Grande and Klamath Falls

Source	Units	Existing Standards	Proposed Contingency (2) Standards
		(1)	
Wood-Waste Boilers <35MM Btu input	gr/dscf opacity %	0.2/0.1 40	no change (3) 20
Wood-Waste Boilers >35MM Btu input	gr/dscf opacity %	0.2/0.1 40	0.030 10
Plywood Plants	lb/ksq-ft opacity	1 20	no change no change
Veneer dry--steam/gas(4)	lb/ksq-ft opacity %	0.55 10/20	0.30 5/10
Veneer dry--WF<20%(5)	lb/ksq-ft opacity %	0.75 10/20	0.40 5/10
Veneer dry--WF>20%(5)	lb/ksq-ft opacity %	1.50 10/20	0.45 5/10
Hardboard Plants	(6) lb/ksq-ft opacity	1 20	0.25 no change
Wood dryers	gr/dscf opacity	0.2/0.1 20	0.1 no change
Press/cooling vents	lb/ksq-ft opacity	--- 20	0.15 no change
Air conveying syst.	(7) gr/scf opacity %	0.2/0.1 20	--- ---
Air Convey =<3 T/Yr	gr/scf opacity %	--- ---	0.10 20
Air Convey >3 T/Yr	gr/scf % CE (9) opacity %	--- --- ---	<0.005 (8) 98.5 20
Industrial Sources listed in Note (10)	fugitives particulate	---	plan & implement (11)

Proposed Contingency Particulate Emission Standards---Industrial Sources

NOTES:

- (1) gr/dscf: Existing sources (prior to June 1, 1970) / New sources (constructed or modified after June 1, 1970)
Veneer dryer opacity: Average operating opacity / Maximum opacity.
- (2) Proposed "contingency standard" meets both the Reasonably Available Control Technology (RACT) and the Best Available Control Technology (BACT) criterion.
- (3) Boilers >30 MM Btu input subject to NSPS must meet 0.056 gr/dscf.
- (4) Extrapolated (based on source tests) for an emission concentration to ensure an opacity of no more than 10 percent.
- (5) WF<20% means direct wood-fired dryer, fuel <20% moisture (wet basis)
WF>20% means direct wood-fired dryer, fuel >20% moisture (wet basis)
- (6) Hardboard standard INCLUDES wood dryers, EXCLUDES press/cooling vents
- (7) "Air Conveying System" means an air moving device, such as a fan or blower, associated ductwork, cyclone or other collection device.
for moving material entrained in a moving airsteam.
- (8) Reference: 0.005 reflects minimum control achievable for bag filter.
- (9) "CE" means Control Efficiency of emission control device.
- (10) Large sawmills, all plywood mills and veneer manufacturing plants, particleboard and hardboard plants, stationary asphalt plants, and stationary rock crushers.
- (11) Fugitive emissions shall be controlled in accordance with a site-specific plan and implementation (see OAR 340-40-043(2) for detailed requirements).

TECHNICAL SUPPORT DOCUMENT
FOR EPA'S PROPOSED DISAPPROVAL
OF REVISIONS TO OREGON'S RULES FOR
KRAFT PULP MILLS AND
BOARD PRODUCTS INDUSTRIES

INTRODUCTION

This technical support document summarizes the major problems and deficiencies with the submitted revisions to Oregon's rules for kraft pulp mills and board products industries. More detail on these and other deficiencies are included in the attachments to this document as follows:

Attachment 1 - EPA Review of Proposed Revisions to the Rules for Kraft Pulp Mills in the Oregon State Implementation Plan

Attachment 2 - "SIP Approvability Checklist - Enforceability" for the Oregon Kraft Pulp Mill Rules

Attachment 3 - "Determination of Completeness Checklist" for the Oregon Kraft Pulp Mill Rules

Attachment 4 - EPA Review of Proposed Revisions to the Rules for Board Products Industries in the Oregon State Implementation Plan

Attachment 5 - "SIP Approvability Checklist - Enforceability" for the Oregon Board Products Industries Rules

Attachment 6 - "Determination of Completeness Checklist" for the Oregon Board Products Industries Rules

BASIS FOR EPA'S PROPOSED DISAPPROVAL OF AMENDMENTS TO OREGON'S RULES FOR KRAFT PULP MILLS (OAR 340-25-150 THROUGH 205)

1. The existing emission limits for particulate matter have been revised from short term (a kraft cycle) to monthly averages. (See the definition of "production" in OAR 340-25-150(11) and "Particulate Matter" emission limits in OAR 340-25-165(2). In addition, the new concentration emission limits are also expressed in terms of monthly arithmetic averages. Emission limits with a monthly averaging time are not practicably enforceable nor are they adequate to protect the 24-hour average particulate matter standards and increments.

2. The emissions monitoring requirements for particulate matter (OAR 340-25-180(3)) have been relaxed by deleting the requirement for a regular sampling schedule and the requirement for continuous particulate monitoring of lime kiln emissions, and by revising the rules to allow continuous opacity monitoring to substitute for continuous particulate monitoring of recovery furnace emissions. These revisions weaken the enforcement of the particulate emission limits, and make enforcement of the proposed monthly average particulate emission limitations for the lime kilns and recovery furnaces almost impossible.

3. A provision for monitoring combined emission streams has been added which allows for monitoring of a single, combined emission stream rather than the emissions from individual emissions units. This provision will make it practicably impossible to determine whether individual emission units remain in compliance with the applicable emission limits.

4. The reporting requirements have been revised to require reporting of emissions over averaging times which are inconsistent with the emission limitations and/or ambient standards. For example, particulate matter emissions and pulp production are required to be reported as monthly averages which, although consistent with the averaging times of the revised particulate emission limitations, are inconsistent with the averaging time of the NAAQS and PSD increments. Sulfur dioxide emissions are required to be reported as monthly averages even though the emission limitations are in terms of daily averages. The averaging times for reporting emissions must be consistent with both that of emission limitations and the short term ambient air quality standards, and in no case can they be longer than 24-hour averages.

5. The provision which required that other established air quality limitations be met by pulp mills has been repealed. By repealing this provision, the opacity limitations for pulp mill sources have also been repealed. EPA regulations require there to be visible emission limitations (or other means of ensuring continuous compliance) for all sources of particulate matter. Since the rules for pulp mills do not, in and of themselves, contain visible emission standards or any other means of ensuring continuous compliance, the rescission of this provision is not approvable.

6. A new provision for chronic upset conditions has been added which exempts recurring upset conditions from DEQ's excess emissions (upset/breakdown) rules. This new provision does not meet EPA's requirements for an excess emission rule since it does not indicate that excess emissions from chronic upset conditions are violations of applicable emission standards.

7. There are many problems with the revisions relating to enforceability, including lack of compliance dates/schedules, test methods, and compliance procedures.

8. No technical justification was submitted in support of the relaxation of the particulate matter emission limits. Sources affected by the rule change were not identified, changes in actual and allowable emissions were not quantified, and no demonstration was made that the revision would provide for attainment and maintenance of ambient air quality standards and PSD increments, and protect visibility in mandatory federal Class I areas.

BASIS FOR EPA'S PROPOSED DISAPPROVAL OF AMENDMENTS TO OREGON'S RULES FOR BOARD PRODUCTS INDUSTRIES (OAR 340-25-305 THROUGH 325)

1. The opacity limitations for veneer dryers have been revised from the existing 20% (10% for new dryers) opacity limitation with the traditional 3-minutes per hour exemption, to one involving a 10% "design" opacity, a 10% "average operating" opacity, and a 20% "maximum" opacity. However, the terms "design," "average operating," and "maximum" have not been defined or explained. Furthermore, the revised rules contain no source test methods, averaging times, or compliance methodologies to provide for enforcement of the new opacity limitations.

2. The applicability provision for the two new particulate emission limits for wood fired veneer dryers is based upon the moisture content of the fuel (less than or equal to 20% versus greater than 20%). However, there is no enforceable methodology or averaging time specified for determining fuel moisture content.

3. A new provision has been added which adjusts the particulate emission limit for a wood fired veneer dryer based upon the amount of steam generated by the heat source. This provision also exempts the heat source of wood fired veneer dryers from the emission limits for wood fired boilers. This provision is not acceptable where a wood fired boiler produces steam for more than just the veneer dryer or diverts only part of the combustion gases to the veneer dryer. The existing emission limit for wood fired boilers must continue to apply to all combustion emissions except those actually used in the veneer dryer (especially those emitted between drying cycles).

4. The provisions which restricted open burning of wood residues and other refuse in conjunction with the operation of any veneer or plywood manufacturing mill, particleboard manufacturing plant, and hardboard manufacturing plant have been deleted. No equivalent provisions have been identified or provided to regulate these sources.

5. There are many problems with the revisions relating to enforceability, including lack of compliance dates/schedules, test methods, compliance procedures and monitoring and reporting requirements.

6. No technical justification was submitted in support of the relaxation of the opacity limitations and the new particulate matter emission limits. Sources affected by the rule change were not identified, changes in actual and allowable emissions were not quantified, and no demonstration was made that the revision would provide for attainment and maintenance of ambient air quality standards and PSD increments, and protect visibility in mandatory federal Class I areas.

EPA REVIEW OF PROPOSED REVISIONS
TO THE RULES FOR BOARD PRODUCTS INDUSTRIES
IN THE OREGON STATE IMPLEMENTATION PLAN

SUMMARY OF AMENDMENTS TO OREGON'S RULES FOR BOARD PRODUCTS
INDUSTRIES OAR 340-25-305 THROUGH 325

Definitions (340-25-305)

- (1) "Department" - no changes
- (2) "Emission" - no changes
- (3) "Hardboard" - no changes
- (4) "Operations" - no changes
- (5) "Particleboard" - no changes
- (6) "Person" - new citation to the ORS
- (7) "Plywood" - no changes
- (8) "Tempering oven" - no changes
- (9) "Veneer" - no changes
- (10) "Opacity" - new definition. However, the citation to OAR 340-21-005(4) is erroneous because OAR 340-21-005 has been revised and renumbered since 1979 when this section was updated.
- (11) "Visual opacity determination" - new definition
- (12) "Opacity readings" - new definition
- (13) "Fugitive emissions" - new definition
- (14) "Special problem area" - new definition
- (15) "Wood fired veneer dryer" - new definition

General Provisions (OAR 340-25-310)

- Subsection (2), which indicates that the emission limitations established in this rule are in addition to all other rules has been revised to reference a new exception provision in OAR 340-25-315.
- No other changes to this section

Veneer and Plywood Manufacturing Operations (OAR 340-25-315)

Subsection (1) Veneer Dryers:

- This subsection has been revised to replace the current 20% (for existing dryers) and 10% (for new dryers) opacity limitations with provisions which require (A) a design opacity of 10%; (B) an average operating opacity of 10%; and (C) a maximum opacity of 20%. However, there are no averaging times or compliance methodologies specified to provide for enforcement of these new opacity limitations.
- New particulate emission limitations for wood fired veneer dryers have been added to this subsection. However, the emission limits differ for units using fuel which has a moisture content by weight of 20% or less and for units using fuel which has a moisture content by weight of greater than 20%. However, there is no enforceable methodology or averaging time specified for determining fuel moisture content.
- These two emission limits are further adjusted by the addition of a factor based on the amount of steam generated by the heat source, and the heat source itself is exempted from the emission limits for wood fired boilers in OAR 340-21-030. This new provision is not acceptable where a wood fired boiler provides steam for multiple uses and only part is used as the heat source for the veneer dryers.
- This subsection has been further revised to include new requirements for operation and maintenance, new requirements for control of fugitive emissions, and new provisions which allow the DEQ to require more restrictive emission limitations in certain circumstances.

Subsection (2) Other Emission Sources

- The citation in paragraph (b) of this subsection has been revised to reflect the new numbering of this section.

Subsection (3) Monitoring and Reporting

- This new subsection has been added to require the monitoring and reporting of visible air contaminant emissions from each veneer dryer emission point.
- The previous provisions of this subsection (OAR 340-25-315(3) "Open Burning" have been deleted.

- No other changes to this section

Particleboard Manufacturing Operations (OAR 340-25-320)

- The citations in paragraphs (1)(c) and (2)(b) have been revised to reflect the new numbering of this section.
- Subsection (4) "Open Burning" has been deleted.
- No other changes to this section

Hardboard Manufacturing Operations (OAR 340-25-325)

- The citations in paragraphs (1)(c) and (2)(b) have been revised to reflect the new numbering of this section.
- Subsection (5) "Open Burning" has been deleted.
- No other changes to this section



December 14, 1990

Reply To
Attn Of: AT-082

MEMORANDUM

SUBJECT: Review of Final Medford-Ashland and Grants Pa

FROM: David C. Bray, Environmental Scientist
Air Programs Development Section

A handwritten signature in black ink, appearing to be "DCB", written over the printed name of David C. Bray.

TO: George Lauderdale, Environmental Protection Specialist
Air Programs Development Section

In accordance with your request, I have reviewed the final PM₁₀ industrial rules for Medford-Ashland and Grants Pass (Oregon Administrative Rules, Chapter 340, Division 30, Specific Air Pollution Control Rules for the Medford-Ashland Air Quality Maintenance Area and the Grants Pass Urban Growth Area) which were adopted by the Oregon Environmental Quality Commission on September 7, 1989. These final rules are substantially different than the proposed rules upon which we commented. Although changes were made to address our comments, not all are satisfactory. More importantly, numerous other changes were made to the rules which do not meet EPA requirements. The following are my comments on these final rules:

OAR 340-30-010 Definitions

1. The definition of "Modified Source" (OAR 340-30-010(23)) is based on increases in potential emissions rather than actual emissions as required by EPA regulations and the Clean Air Act. It also conflicts with ODEQ's current New Source Review Rules and Air Contaminant Discharge Permit Rules which correctly base modifications on actual emissions increases.
2. The definition of "Offset" (OAR 340-30-010(25)) allows increases in emissions of one pollutant to be offset by decreases in emissions of a different pollutant, contrary to the requirements of EPA regulations and the Clean Air Act.
3. The definition of "Fugitive Emissions" (OAR 340-30-010(16)) is less stringent than EPA's requirement in that it is based on criteria such as measurement and treatment by conventional methods, rather than simply the ability to pass the emissions through a vent, duct, or other equivalent opening.

4. The definition of "Averaging Operating Opacity" (OAR 340-30-010(2)) has several problems. First, EPA Method 9 is not appropriate as it is a 6-minute average and as such, contains data reduction requirements which are inconsistent with a three-day average. Second, it is not clear whether all opacity readings on the three days are combined to determine the average, or whether an average is determined for each of the three days. Third, it is not clear whether the three days must be consecutive or whether they can occur over any time period (one year, ten years). Finally, visual observation is not a practicable source test method for a multi-day standard and as such, fails to meet EPA's enforceability requirements.
5. The definition of "Design Opacity" (OAR 340-30-010(8)) is so vague that it will be unenforceable in practice. No averaging time or test method is specified.
6. There are several problems with the definitions of "Fuel Moisture Content by Weight Greater than 20 Percent" (OAR 340-30-101(14)) and "Fuel Moisture Content by Weight Less than 20 Percent" (OAR 340-30-101(15)). First, it is not clear whether certain fuels are automatically included under each definition regardless of moisture content (e.g., bark and hogged wood waste under (14); pulverized ply trim and sander dust under (15)). Second, the procedures for averaging are not specified with respect to time periods and number of samples. Finally, the provisions regarding measurement during compliance source testing are inconsistent with average moisture contents during normal operation. Overall, these definitions are so vague that they will be unenforceable in practice.

OAR 340-30-015 Wood Waste Boilers

1. The particulate matter emission limitations in OAR 340-30-015(1) and (3)(c) lack averaging times as required by EPA.
2. Exception provisions have been added to the opacity limits in OAR 340-30-015(2) and (3)(b) which allow ODEQ to change the opacity limits without EPA approval as required by the Clean Air Act.
3. The relationship between the new paragraph (3) and the existing paragraphs (1) and (2) is unclear as paragraph (3) establishes tighter limits for the same sources as paragraphs (1) and (2). The new paragraph (3), as originally proposed, applied to rebuilt boilers.

OAR 340-30-021 Veneer Dryer Emission Limitations

1. As discussed above, the new "design opacity" limitation (OAR 340-30-021(a)) is unenforceable as there is no averaging time or test method.

2. The new "maximum opacity" limitation (OAR 340-30-021(c)) includes both an exception provision which allows the limit to be changed without EPA approval and a provision which will exempt sources with wet plumes from any opacity limit. Although the effect of water vapor in the plume can be discounted, the particulate portion of the plume must still be required to comply with the opacity limit.

3. The new particulate emission limitations in OAR 340-30-021(d), (e), (f), (g), and (h) all lack averaging times as required by EPA.

4. The new paragraph (6) indicates that compliance with the visible emission limits in (1) is to be determined in accordance with ODEQ Method 9. However, the definitions of "average operating opacity" and "maximum opacity" indicate that compliance is determined in accordance with EPA Method 9. Whereas EPA Method 9 is appropriate for determining the "maximum opacity", ODEQ Method 9 is not. Furthermore, neither EPA Method 9 or ODEQ Method 9 are appropriate for determining "average operating opacity".

OAR 340-30-025 Air Conveying Systems

1. This section needs to indicate whether the 10 tons per year applicability criteria is based on actual or potential emissions.

OAR 340-30-040 Charcoal Producing Plants

1. The particulate emission limitation lacks an averaging time as required by EPA.

If you have any questions on my comments, please don't hesitate to ask.

cc: David Kircher, APDS ..
Laurie Kral (Docket)
Rindy Ramos, APDS



SEP 22 1989

Reply To
Attn Of: AT-082

Nick Nikkila
Administrator, Air Quality Division
Oregon Department of Environmental Quality
811 Southwest Sixth Avenue
Portland, Oregon 97204

Dear Mr. Nikkila:

We have completed our review of the Oregon Department of Environmental Quality's (DEQ) final rule changes to implement the new national ambient air quality standards for PM₁₀, specifically revisions to OAR 340-20-220 through 260, 340-27-005 through 055, 340-31-005 through 055, and 340-31-100 through 130.

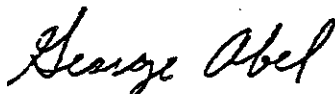
These revisions to the Oregon state implementation plan (SIP) were submitted for EPA approval on May 20, 1988. Prior to this final submittal, we had reviewed the draft regulations and forwarded our written comments to DEQ in a letter dated March 16, 1988. Shortly thereafter, we held conference calls with your staff to discuss our concerns. Revisions to the original submittal or additions subsequent to our review were not received by EPA until the day of the Environmental Quality Commission's adoption hearing on April 29, 1988. Many of our concerns were not addressed in your revised submittal. Additionally, OAR 340-20-225(17) and 340-20-245(c) were not part of your original rules package and OAR 340-20-245(3) had been revised substantially. Because the rules had already been adopted, there seemed to be little chance of effecting revisions needed to address our concerns in the short term. We deferred comment on the final package until now on the assumption that corrections we mutually agree are needed can be made as part of your process of adopting final Group I PM₁₀ SIPs.

As we discussed with John Kowalczyk of your staff, many provisions of the new rules are approvable. However, we cannot recommend total approval of the submittal. This finding results primarily from the changes made in the prevention of significant deterioration (PSD) and nonattainment area new source review (NSR) rules which make them less stringent than EPA's requirements. The rule changes which we feel are substantially in conflict with the Clean Air Act and EPA regulations are explained in Attachment 1. Other concerns are discussed in Attachment 2. DEQ may be able to provide sufficient explanations for some of the items discussed in Attachment 2 for EPA to approve them with conditions or understandings.

My staff is available to assist you in revising your regulations so that they are consistent with the applicable regulatory requirements. Your timely attention to this matter is requested. Because of new SIP processing requirements, we may need to proceed to propose disapproval of some portions of the submittal unless we can resolve the issues expeditiously. You may also want to consider withdrawing the current submittal until you are ready to adopt revised rules.

I suggest we arrange to discuss these comments in the near future. In the interim, if I can answer any questions, please feel free to contact me at (206) 442-4166 or Dave Kircher, of my staff, at (206) 442-4198.

Sincerely,



George Abel, Chief
Air Programs Branch

Enclosures

cc: Ken Brooks, 000
John Kowalczyk, DEQ

9/22/82

ATTACHMENT 1

OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY
RULE CHANGES (MAJOR ISSUES)

1. OAR 340-20-225(17) - The proposed change to the definition of "Nonattainment Area" conflicts with EPA's regulations. By removing the requirement that nonattainment area designations must be approved by EPA, DEQ has changed the applicability provisions of its nonattainment area new source review rules. The NSR rules must apply to all areas designated as nonattainment by EPA in 40 CFR Part 81. These include areas designated by the Oregon Environmental Quality Commission (EQC), but only after EPA approval. 40 CFR Part 81 could also contain areas which were designated solely by EPA, such as could occur under the Mitchell-Conte Amendment. Under the revised definition, the EQC could revise the boundaries of the current nonattainment areas or even redesignate such areas as attainment and revoke all of the SIP's Part D provisions without EPA approval. If DEQ intends to include a definition of "nonattainment area" in the PM₁₀ rules, the definition must not conflict with the federal rules. If EPA disapproves the definition of "nonattainment area", we would also be disapproving the DEQ Part D NSR provisions. Under Section 110(a)(2)(I) of the Clean Air Act, the Oregon SIP would no longer meet the requirements of Part D. This would automatically trigger a moratorium on construction of major stationary sources in designated nonattainment areas (CO and ozone).

2. OAR 340-20-245(3) - The changes to the "Exemption for Sources Not Significantly Impacting or Contributing to Designated Nonattainment Areas" conflict with our rules. This exemption, as written, applies to certain major sources which emit more than 100 tons per year but less than 250 tons per year. The requirements of Section 110(a)(2)(D) of the Clean Air Act and 40 CFR 51.165(b) of EPA regulations indicate that the major source permitting regulations must apply to all sources which emit or have the potential to emit more than 100 tons per year. The "significant air quality impact" levels cannot be applied to impacts on PSD increments violations, since the levels were intended only for use with the NAAQS. These levels represent a large fraction of the increments (in some cases 100%) and although impacts which are less than these levels would be insignificant with respect to the NAAQS, they are not insignificant with respect to the increments. Finally, the exemption is too broad, in that it exempts major sources in attainment or unclassified areas from all of the requirements of the NSR regulations (OAR 340-20-220 to 270) instead of just the requirements in question, specifically OAR 340-20-245. This section must stipulate review of all major sources as required by the Act and EPA regulations.

3. OAR 340-20-245(c) - The new exemption for PM₁₀ does not meet the section 40 CFR 51.166(i)(8)(i) requirements. The exemption cites 40 CFR 52.21 which is not applicable to Oregon and uses the July 31, 1987, PM₁₀ effective date which is not relevant to the Oregon SIP. The sections of 40 CFR 52.21 cited in this new DEQ exemption, specifically 40 CFR 52.21(1)(4)(ix) and (x), require determinations by the EPA Administrator regarding the applicability of 40 CFR 52.21 with respect to particulate matter before July 31, 1987. The provisions of 40 CFR 52.21 are only applicable to SIPs which have been disapproved with respect to PSD. DEQ has had an approved PSD program since 1983. DEQ does have the option of including a transition provision similar to EPA's [40 CFR 51.166 (i)(10)]. A provision which references the DEQ rules and the effective date of Oregon's PM₁₀ provisions could then be adopted. This exemption however, must be located in a section of general applicability, rather than in the section for sources in attainment or unclassifiable areas, if it is to exempt sources from all of the NSR requirements for PM₁₀ before the effective date of the Oregon PM₁₀ provisions.

4. OAR-340-31-015, -020, -025, -030, -040, and -055 - The changes to the ambient standards for PM₁₀, sulfur dioxide, carbon monoxide, ozone, nitrogen dioxide, and lead, which make them applicable only at monitoring sites are not approvable because they make the standards less stringent than the NAAQS. The NAAQS are applicable everywhere in the ambient air, not just at locations which meet the monitoring probe siting criteria. The monitoring probe siting criteria in 40 CFR Part 58 represent a balancing between the need for representative data and available monitoring resources. They do not, however, limit the applicability of the ambient standards to just those sites which satisfy the monitoring criteria.

5. OAR-340-27-005, -010, -015, Tables 1-3 - We cannot recommend approval of the emergency episode plans as currently submitted for two reasons. DEQ and local agencies in the state of Oregon lack the legal authority in accordance with Section 110(a)(2)(F)(v) of the Clean Air Act (i.e. no enforceable regulations or ordinances in place) to reduce impacts from residential wood heating during episodes. Furthermore, the plan does not include the procedures for its implementation and enforcement. The specific content requirements for these plans can be found in 40 CFR 50.152.

**RATIONALE FOR BACT DETERMINATION FOR INDUSTRIAL
CONTINGENCY REQUIREMENTS FOR PM₁₀ NONATTAINMENT AREAS**

Industrial sources were reviewed to determine Best Available Control Technology (BACT) for PM₁₀ emission reductions for purposes of Section 189 of the Clean Air Act. The Department has proposed BACT as the contingency requirement for industrial sources located in or impacting a PM₁₀ nonattainment area which fails to meet the Clean Air Act attainment date. This attachment briefly describes the rationale used to determine BACT for affected sources. Most of the BACT designations are patterned after the control technology which has been applied or will be used to meet the standards required by the Medford-Ashland and Grants Pass industrial rules adopted in 1989.

Veneer Dryer BACT: The mass emission limits set for veneer dryers are based on the performance of emission control hardware on existing facilities in Oregon. Tests at these facilities have shown that at least three commercially available particulate collectors (wet electrostatic precipitators--E-Tube, dry electrostatic filter--EFB, and electrostatic filter bed--IWS) can achieve the standards for both steam-heated and direct wood-heated veneer dryers.

Particle Wood Dryer BACT: Three types of emission control devices, wet electrostatic precipitator, dry electrostatic filter and sand-air wet filter have proven ability to control rotary wood particle dryers to a high degree of emission reduction. These devices are currently being operated on rotary wood particle dryers at three plants in Oregon and have also been installed on some rotary dryers in other parts of the nation.

Large Wood-Waste Boiler BACT: Large wood-waste boilers, or equivalent total boiler capacity at a plant site, (greater than 35 million Btu/hr heat input) would be required to be equipped with emission control systems which limit particulate emissions to Lowest Achievable Emission Rate (LAER). To meet this requirement and insure compliance with the 0.030 grains per standard dry cubic foot (gr/sdcf) concentration limit the application of electrostatic precipitators (ESP) is considered appropriate. This technology has been installed and shown to be effective on several boilers in the nation, including one in Southern Oregon. The application of bagfilters is another technology that has been used but to a much lesser degree than ESPs.

Press/Cooling Vent BACT: Test have demonstrated that particulate emissions from press/cooling vents may vary significantly from one hardboard manufacturing plant to another depending on a number of factors including vent type, vent location, etc. Techniques have been applied which give dramatic reduction of

particulate emissions without adding external particulate collectors. The proposed emission rate of 0.15 pounds/1000 square feet of board has been demonstrated at one hardboard manufacturing plant in Oregon with no external emission control equipment in place. Reduction of emissions down to this standard is believed to be achievable through the techniques of strategically locating air pick-up/discharge points and/or adding retrofit emission control equipment. BACT hardware for vent emission control is the same as for veneer dryers. Because of the relatively low emissions and high air flow from the uncontrolled vents the cost/benefit ratio (dollars per ton of PM₁₀ reduction) for vent control will likely be higher than for most other sources.

Air Conveying Equipment BACT: Particulate emissions from cyclones (air conveying systems) which discharged more than 10 tons/year have already been controlled in the Medford AQMA. The installation and operation of bagfilters has been the method used. The Department believes that it is now practicable to extend the application of this technology to cyclone discharging more than three tons/year as BACT.

Charcoal Manufacturing BACT: The rationale for proposing to reduce emissions from charcoal operations from 10 to 5 pounds per ton of char is based on equivalency of combusting an equal amount of wood-waste in a large boiler or in a char manufacturing operation. In a process where the off-gases from the char furnace are vented through a waste-heat boiler, the same BACT technology applied to large boilers is expected to be feasible for the charcoal manufacturing operation. In a process where the off-gases from the char furnace are not vented through a waste-heat boiler, the exhaust gas temperature is too high for conventional control equipment.

Industrial Fugitive Emissions BACT: The development and implementation a fugitive emission plan by each company specific to the plant site may be considered to be BACT. This strategy is currently in place in the Medford AQMA. The application of dust suppressants or paving of haul roads or log yards, the installation of special fence type barriers around wood-waste stock piles and sweeping of paved mill yards are examples of BACT technology that will be implemented on a case by case basis.

Emission Reduction Estimates: The table below summarizes the Department's estimate of emission reductions associated with implementing the PM-10 industrial contingency plan in each area. The emission reduction estimates for the Klamath Falls nonattainment area is shown for two different control scenarios: (a) implementing the proposed industrial emission control contingency measure within the defined PM-10 nonattainment area (NAA), (b) implementing the contingency measures on major industrial sources located within the County's Air Quality Control Area (AQCA) (the AQCA includes the PM-10 nonattainment area).

Estimated Emission Reductions for Industrial Sources
Upon Implementation of
PM-10 Nonattainment Area Contingency Plans

Emission Source	PM-10 Emissions Reductions -- Tons/Year				
	Medford-Ashland	Grants Pass	Klamath Falls		La Grande
			NAA*	NAAW**	
Boiler	--	--	66	495	76
Charcoal Mfgr.	45	--	--	--	--
Veneer Dryer	--	--	42	50	--
HB Press Vent	--	--	3	36	--
Particle Dryer	--	--	13	13	--
Air Convey syst.	41	12	8	250	2
Total per Area	86	12	132	844	78

* Industrial emission sources within the nonattainment area only.

** Industrial emission sources within the nonattainment area and the Weyerhaeuser complex.

Cost/Benefit Ratio: The Department's estimated annualized industrial cost/benefit ratio reduction in the various nonattainment areas range from about \$4,000 to \$13,000 per ton. The cost/benefit ratio of individual types of emission sources vary significantly. For example, annualized capital investment for controlling emissions from air conveying sources at one plant is estimated to be about \$2300 per ton while veneer dryer emission reductions are estimated to have a cost/benefit ratio of about \$5200 per ton. The cost/benefit ratio is usually high where the emission source to be controlled will have low incremental emission reductions.

DN:ADG
RPT\AH15029
(8/14/91)

REQUEST FOR EQC ACTION

Meeting Date: August 22, 1991
Agenda Item: F
Division: Air Quality
Section: Planning & Development

SUBJECT:

Hearing Authorization: Open Burning Rule Amendments for the Rogue Basin Open Burning Control Area.

PURPOSE:

To improve consistency between local and state open burning requirements and provide an open burning contingency measure in the PM₁₀ control strategies in the Medford-Ashland and Grants Pass PM₁₀ nonattainment areas.

ACTION REQUESTED:

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

- Authorize Rulemaking Hearing
- Adopt Rules

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

- Attachment A
- Attachment B
- Attachment C
- Attachment D

- Issue a Contested Case Order
- Approve a Stipulated Order
- Enter an Order
 - Proposed Order

- Attachment



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



Meeting Date: August 22, 1991
Agenda Item: F
Page 2

<input type="checkbox"/> Approve Department Recommendation	Attachment	<input type="checkbox"/>
<input type="checkbox"/> Variance Request	Attachment	<input type="checkbox"/>
<input type="checkbox"/> Exception to Rule	Attachment	<input type="checkbox"/>
<input type="checkbox"/> Informational Report	Attachment	<input type="checkbox"/>
<input type="checkbox"/> Other: (specify)	Attachment	<input type="checkbox"/>

DESCRIPTION OF REQUESTED ACTION:

This proposal requests the Environmental Quality Commission (EQC, Commission) to authorize a public hearing on proposed rule changes to OAR 340-23-043 that would require more restrictive ventilation criteria for the Rogue Basin Open Burning Control Area consistent with local ordinances. The proposed rule changes to OAR 340-23-090 would also impose a ban on open burning in the entire Open Burning Control Area during November, December, January, and February as part of the PM₁₀ contingency plans if the Medford-Ashland or Grants Pass area fails to meet PM₁₀ standards by December 31, 1994.

AUTHORITY/NEED FOR ACTION:

<input type="checkbox"/> Required by Statute: _____	Attachment	<input type="checkbox"/>
Enactment Date: _____		
<input checked="" type="checkbox"/> Statutory Authority: <u>ORS 468.290, 468.355</u>	Attachment	<input checked="" type="checkbox"/> E
<input type="checkbox"/> Pursuant to Rule: _____	Attachment	<input type="checkbox"/>
<input checked="" type="checkbox"/> Pursuant to Federal Law/Rule:		
Federal Clean Air Act Amendments of 1990.	Attachment	<input type="checkbox"/>
<input type="checkbox"/> Other:	Attachment	<input type="checkbox"/>
<input checked="" type="checkbox"/> Time Constraints:		

The 1990 Clean Air Act requires states to submit approvable PM₁₀ control strategies, including specific rules necessary to implement the strategies and contingency plans, by November 15, 1991.

DEVELOPMENTAL BACKGROUND:

<input type="checkbox"/> Advisory Committee Report/Recommendation	Attachment	<input type="checkbox"/>
<input type="checkbox"/> Hearing Officer's Report/Recommendations	Attachment	<input type="checkbox"/>
<input type="checkbox"/> Response to Testimony/Comments	Attachment	<input type="checkbox"/>
<input checked="" type="checkbox"/> Prior EQC Agenda Items:		

Agenda Item K, August 28, 1981 Open Burning Rules

Meeting Date: August 22, 1991
Agenda Item: F
Page 3

___ Other Related Reports/Rules/Statutes:	Attachment ___
___ Supplemental Background Information	Attachment ___
	Attachment ___

REGULATED/AFFECTED COMMUNITY CONSTRAINTS/CONSIDERATIONS:

State-wide rules require a ventilation index of 200 or more before open burning can be allowed. Several local governments in the Rogue Basin - including Jackson County, Ashland, Central Point, and Jacksonville - have adopted a more stringent ventilation index of 400 in response to PM₁₀ concerns. Other local governments in the Basin have adopted a ventilation index of 200 or are relying on the state-wide index of 200.

The Rogue Valley Fire Chiefs' Association and local governments support the change in state rules for uniformity with recently adopted local ordinances. Environmental groups support the seasonal ban on open burning.

Orchardists in the Medford-Ashland area are opposed to the current Jackson County open burning restrictions on which the DEQ proposal is based. An open burning advisory committee formed by the Jackson County Commissioners has been unable to arrive at a consensus recommendation. The Department of Environmental Quality (DEQ, Department) intends to reconcile the proposed state rule proposal with the decision of the Jackson County Commissioners during the EQC public hearing process.

The tightening of open burning requirements will not necessarily reduce the total amount of open burning, but will reduce the amount of open burning on poor ventilation days and, if the contingency plan is implemented, in poor ventilation months.

PROGRAM CONSIDERATIONS:

The more restrictive open burning requirements may result in additional enforcement action by the Department, especially the Southwest Regional Office in Medford.

ALTERNATIVES CONSIDERED BY THE DEPARTMENT:

1. The Medford-Ashland and Grants Pass PM₁₀ control strategies could rely solely on the non-uniform existing state and local rules for control of open burning emissions. For example,

Medford and Grants Pass have year-round bans on open burning; some other cities and part of the unincorporated portion of Jackson County have seasonal bans or more restrictive ventilation criteria than the state rule.

2. The Commission could consider rule revisions for the Rogue Basin Open Burning Control Area that would provide more restrictive and uniform open burning requirements. This would reduce confusion and reduce the impact of open burning on air quality. Without consistent state and local open burning regulations, some local governments may be inclined over time to loosen their ventilation criteria which would be less protective of air quality.

DEPARTMENT RECOMMENDATION FOR ACTION, WITH RATIONALE:

The Department recommends tightening of open burning requirements in the Rogue Basin to provide uniformity and potentially more stringent control if attainment is not reached. This action is proposed, even though open burning is a relatively small contributor to PM₁₀ levels, to insure all sources of PM₁₀ are being addressed in a comprehensive and equitable manner in a very fragile airshed of the state, and to prevent backsliding on this element of the PM₁₀ control strategy. Even with aggressive industrial and residential woodburning control programs, the Medford-Ashland attainment analysis indicates a narrow margin of safety.

CONSISTENCY WITH STRATEGIC PLAN, AGENCY POLICY, LEGISLATIVE POLICY:

The Department is not aware of any conflicts with the strategic plan, agency policy, or legislative policy. The proposed rules are consistent with the Oregon Benchmarks goal of increasing the percentage of Oregonians living in areas which meet ambient air quality standards.

ISSUES FOR COMMISSION TO RESOLVE:

Does the EQC support more restrictive and uniform open burning requirements even though open burning is a significantly smaller contributor to PM₁₀ than other sources such as woodstoves and industry?

Meeting Date: August 22, 1991
Agenda Item: F
Page 5

INTENDED FOLLOWUP ACTIONS:

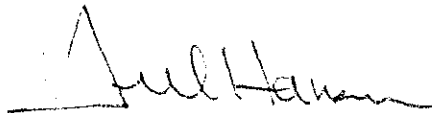
1. Hold public hearings on proposed rule revisions.
2. Summarize public testimony and respond to issues.
3. Propose adoption, with appropriate revisions in response to testimony, at November 1991 EQC Meeting.

Approved:

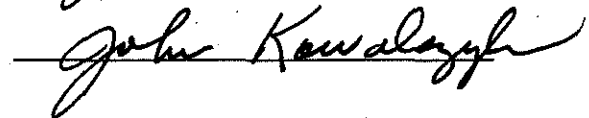
Director:

Division:

Section:







Report Prepared By: Merlyn Hough (229-6446)

Date Prepared: August 14, 1991

MLH:a
RPT\AH15034
(8/14/91)

RULES FOR OPEN BURNING

Open Burning Schedule

340-23-043 Pursuant to ORS 468.450, 476.380, 477.520 and 478.960 the following open burning schedule shall be administered by the Department:

(1) Mandatory Prohibition Based on Adverse Air Quality Conditions:

(a) The Department shall notify the State Fire Marshal that all open burning shall be prohibited in all or a specified part of the state for the times and locations which the Department has declared:

(A) A particulate or sulfur dioxide alert pursuant to OAR 340-27-010(2);

(B) A particulate or sulfur dioxide warning pursuant to OAR 340-27-010(3);

(C) An emergency for any air contaminant pursuant to OAR 340-27-010(4).

(b) All open burning shall be prohibited until the Department notifies the State Fire Marshal that the episode and prohibition have been declared to have terminated.

(2) Discretionary Prohibition of Limitation Based on Meteorological Conditions:

(a) The Department may notify the State Fire Marshal that all or specified types of open burning shall be prohibited or limited in all or any specified parts of the state based on any one or more of the following criteria affecting that part of the state:

(A) An air Stagnation Advisory issued by the National Weather Service;

(B) The daily maximum ventilation index calculated by the Department for the Willamette Valley Open Burning Control Area or Umpqua Basin Open Burning Control Area is less than 200;

(C) the daily maximum ventilation index calculated by the Department for the Rogue Basin [~~or Umpqua Basin~~] Open Burning Control Area is less than ~~200~~400;

(D) The daily maximum ventilation index calculated by the Department for any area outside the Willamette Valley, Rogue Basin and Umpqua Basin open burning control areas is less than 150; or

(E) For regulation of burning of yard debris in urban areas, consideration of the amount of precipitation, expected during the day; or

(F) Any other relevant factor.

(b) All open burning so prohibited or limited shall be prohibited or limited until the Department notifies the State Fire Marshal that the prohibition or limitation has been terminated.

(c) In making the determination of whether or not to prohibit or limit open burning pursuant to this section the Department shall consider:

(A) The policy of the state set forth in ORS 468.280;

(B) The relevant criteria set forth in ORS 468.295(2);

(C) The extent and types of materials available to be open burned;

(D) In the case of Agricultural open burning, the recommendations received from any local agricultural smoke management organization; and

(E) Any other relevant factor.

(d) In making the determination of whether or not to prohibit or limit any open burning pursuant to this section the Department shall give first priority to the burning of perennial grass seed crop used for grass seed production, second priority for annual grass seed crop used for grass seed production, third priority to grain crop burning and fourth priority to all other burning.

(3) Unless and until prohibited or limited pursuant to sections (1) and (2) of this rule, open burning shall be allowed during a day, so long as it is not prohibited by, and is conducted consistent with the other rules in this Division 23 and the requirements and prohibitions of local jurisdiction and the State Fire Marshal.

Stat. Auth.: ORS Ch. 468 & 477

Hist.: DEQ 27-1981, f. & ef. 9-8-81; DEQ 10-1984,
f. 5-29-84, ef. 6-16-84

Coos, Douglas, Jackson and Josephine Counties

340-23-090 Open burning prohibitions for Coos, Douglas, Jackson and Josephine Counties:

(1) Open burning control areas:

(a) The Coos Bay open burning control area as generally described in OAR 340-23-115 and depicted in Figure 3 is located in Coos County.

(b) The Umpqua Basin open burning control area as generally described in OAR 340-23-115, and depicted in Figure 5, is located in Douglas County.

(c) The Rogue Basin open burning control area as generally described in OAR 340-23-115 and depicted in Figure 4, is located in Jackson and Josephine Counties.

(2) Industrial open burning is prohibited unless authorized pursuant to OAR 340-23-100.

(3) Agricultural open burning is allowed subject to OAR 340-23-040, ~~and~~ 340-23-042, 340-23-090(7), and the requirements and prohibitions of local jurisdictions and the State Fire Marshal.

(4) Commercial open burning is prohibited within the Coos Bay, Umpqua Basin and Rogue Basin open burning control areas and in or within three (3) miles of the corporate city limits of Coquille and Reedsport unless authorized pursuant to OAR 340-23-100. Commercial open burning is allowed in all other areas of these counties subject to OAR 340-23-040 and 340-23-042 and the requirements and prohibitions of local jurisdictions and the State Fire Marshal.

(5) Construction and Demolition open burning is prohibited within the Coos Bay, Umpqua Basin and Rogue Basin open burning

control areas unless authorized pursuant to OAR 340-23-100. Construction and Demolition open burning is allowed in other areas of these counties subject to OAR 340-23-040 and 340-23-042 and the requirements and prohibitions of local jurisdictions and the State Fire Marshal.

(6) Domestic open burning is allowed subject to OAR 340-23-040, ~~f-and~~ 340-23-042, 340-23-090(7), and the requirements and prohibitions of local jurisdictions and the State Fire Marshal.

(7) Upon publication by EPA of notice in the Federal Register that the Medford-Ashland Air Quality Maintenance Area or the Grants Pass Urban Growth Area has failed to attain the national ambient air quality for PM₁₀ by the attainment date required in the Clean Air Act, all open burning is prohibited within the Rogue Basin open burning control area during November, December, January, and February unless authorized pursuant to 340-23-100.

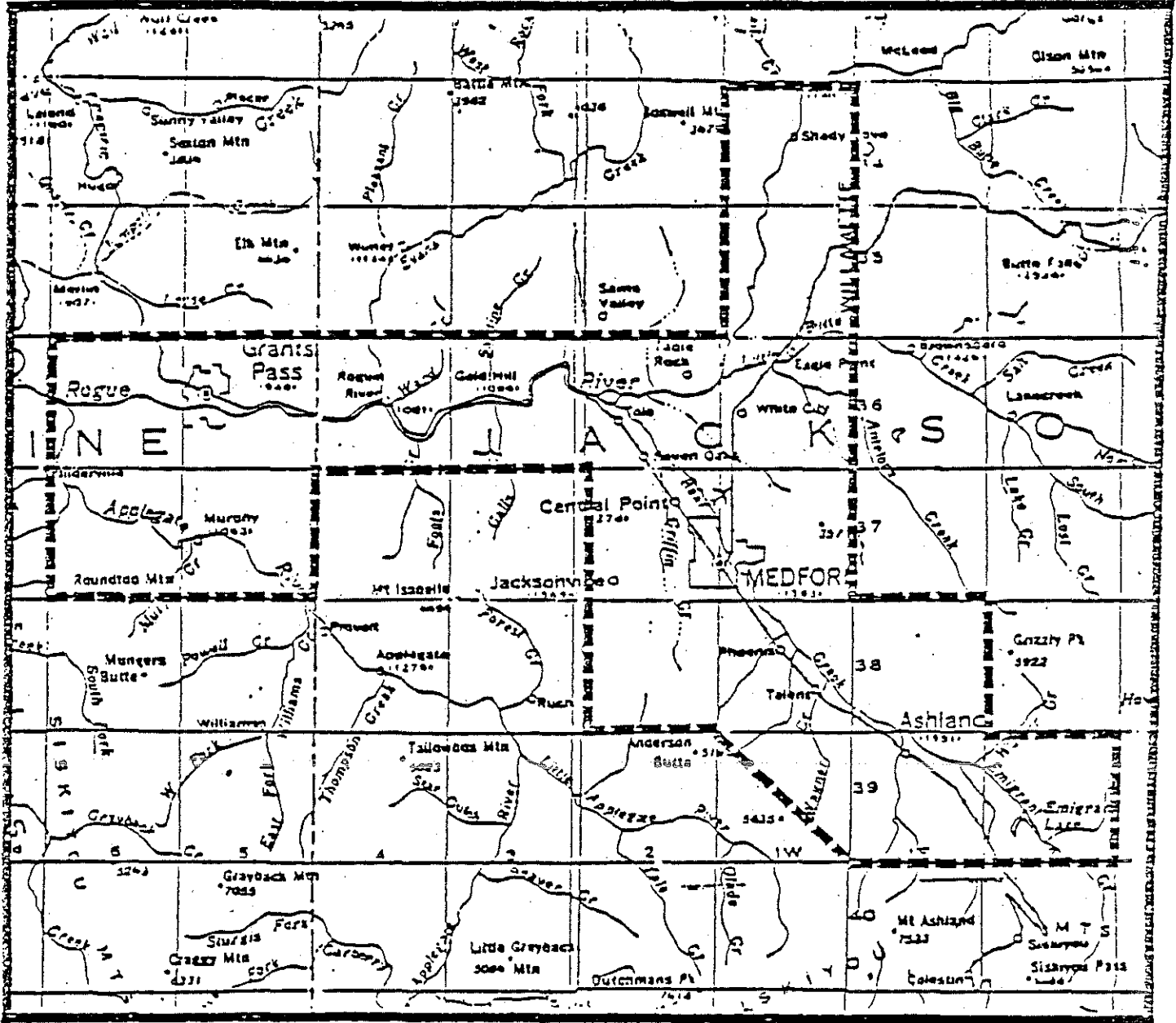
Stat. Auth.: ORS Ch. 468 & 477

Hist.: DEQ 27-1981, f. & ef. 9-8-81

MLH:
RPT\AH15012
(8/14/91)

OREGON ADMINISTRATIVE RULES
CHAPTER 340, DIVISION 23 - DEPARTMENT OF ENVIRONMENTAL QUALITY

ROGUE BASIN OPEN BURNING CONTROL AREA



340-23-115

FIGURE 4

A-4

**RULEMAKING STATEMENTS FOR PROPOSED AMENDMENTS TO
OPEN BURNING RULES AS A REVISION TO THE
STATE OF OREGON CLEAN AIR ACT IMPLEMENTATION PLAN**

STATEMENT OF NEED FOR RULEMAKING

Pursuant to ORS 183.335(7), this statement provides information on the intended action to amend a rule.

(1) Legal Authority

This proposal amends Oregon Administrative Rules (OAR) 340-23-043 and -090. It is proposed under authority of Oregon Revised Statutes (ORS) Chapter 468.

(2) Need for these Rules

This proposal requests the Environmental Quality Commission (EQC, Commission) to authorize a public hearing on proposed rule changes to OAR 340-23-043 that would require more restrictive ventilation criteria for the Rogue Basin Open Burning Control Area consistent with recently adopted local ordinances. The proposed rule changes to OAR 340-23-090 would also impose a ban on open burning in the entire Open Burning Control Area during November, December, January, and February as part of the PM₁₀ contingency plans if the Medford-Ashland or Grants Pass area fails to meet PM₁₀ standards by December 31, 1994.

The federal Clean Air Act requires that states develop and adopt State Implementation Plan (SIP) revisions to assure that areas which violate the PM₁₀ standards are brought into attainment with those standards within prescribed time frames. A contingency plan is also required to be developed and automatically implemented if the area fails to meet the deadline.

The principal means of achieving the necessary air quality improvements is through PM₁₀ emission reductions from woodstoves and fireplaces, the wood products industries, open burning of debris, slash burning, and road dust.

The open burning rule amendments are proposed to improve consistency between local and state open burning requirements in the Rogue Basin and prevent backsliding of PM₁₀ control strategies in the Medford-Ashland and Grants Pass PM₁₀ nonattainment areas.

(3) Principal Documents Relied Upon

The Clean Air Act Amendments of 1990, Title I. 42 U.S.C. 7401 et seq., as amended. November 15, 1990.

Previous staff reports to the Environmental Quality Commission (EQC):

Agenda Item D, January 22, 1988, EQC Meeting, Informational Report: New Federal Ambient Air Quality Standard for Particulate Matter (PM₁₀) and Its Effects on Oregon's Air Quality Program.

Agenda Item G, June 29, 1990, EQC Meeting, Request for Authorization to Conduct Public Hearing on PM₁₀ Air Pollution Control Strategy for the Medford-Ashland AQMA (Amendments to OAR 340-20-047).

Agenda Item D, January 31, 1991, EQC Meeting, PM₁₀ Air Pollution Control Strategy for the Medford-Ashland AQMA: Adoption of SIP Revisions That Were Taken to Public Hearings in August and September 1990.

All documents referenced may be inspected at the Department of Environmental Quality, Air Quality Division, 811 S.W. 6th Avenue, Portland, Oregon, during normal business hours.

LAND USE CONSISTENCY STATEMENT

The proposed rule changes appear to affect land use as defined in the Department's coordination program with the Department of Land Conservation and Development (DLCD), but appear to be consistent with the Statewide Planning Goals.

With regard to Goal 6, (air, water, and land resources quality), the proposed changes are designed to enhance and preserve air quality in the State and are considered consistent with the Goal. The proposed rule changes do not appear to conflict with the other Goals.

Public comment on any land use issue involved is welcome and may be submitted in the same fashion as indicated for other testimony on these rules.

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 DLCD to mediate any appropriate conflicts brought to our attention by local, state, or federal authorities.

MLH:
RPT\AH15010
(8/14/91)

**FISCAL AND ECONOMIC IMPACT STATEMENT
FOR PROPOSED AMENDMENTS TO OPEN BURNING RULES
AS A REVISION TO THE STATE IMPLEMENTATION PLAN**

PROPOSAL SUMMARY

This proposal requests the Environmental Quality Commission (EQC, Commission) to authorize a public hearing on proposed rule changes to OAR 340-23-043 that would require more restrictive ventilation criteria (from a 200 index to the more restrictive 400 index) for the Rogue Basin Open Burning Control Area consistent with recently adopted local ordinances. Based on 1983-90 ventilation index data, this will increase the number of "no burn" days, due to marginal ventilation conditions, from 73 to 149 on an annual basis and from 54 to 83 on a November-February (four-month) seasonal basis.

The proposed rule changes to OAR 340-23-090 would also impose a ban on open burning in the entire Open Burning Control Area during November, December, January, and February as part of the PM₁₀ contingency plans if the Medford-Ashland or Grants Pass area fails to meet PM₁₀ standards by December 31, 1994.

COSTS/CONCERNS TO AFFECTED PARTIES

The tightening of open burning requirements will not necessarily reduce the total annual amount of open burning, but will reduce the amount of open burning on poor ventilation days and, if the contingency plan is implemented, in poor ventilation months. The more restrictive ventilation criteria have been adopted previously by Jackson County and some of the cities in the Medford-Ashland Air Quality Maintenance Area (AQMA). The cities of Medford and Grants Pass have banned open burning year-round.

Environmental groups support the more restrictive ventilation criteria and the seasonal ban on open burning.

Orchardists in the Medford-Ashland area are opposed to the current Jackson County open burning restrictions on which the DEQ proposal is based. An open burning advisory committee formed by the Jackson County Commissioners has been unable to arrive at a consensus recommendation. The Department of Environmental Quality (DEQ, Department) intends to reconcile the proposed state rule proposal with the decision of the Jackson County Commissioners during the EQC public hearing process.

Some of the affected orchardists are small business.

Costs to affected orchardists can be of two types: (1) Land cost to store debris for delayed burning, estimated at \$1,000 per acre-year; and (2) Cost of hauling and chipping debris that is in excess of the value of the resulting chips, estimated at zero (break-even) to \$5 per green ton.

There are about 14,000 acres of orchards in the Rogue Basin, generating about 7,000 green tons of orchard prunings each year that could potentially be burned. In addition, orchards are removed and replaced every 40-80 years, generating an average of about 5,000 tons per year of debris that could potentially be burned. The estimated cost of delivering chipped debris is estimated at \$10-18 per green ton (about \$20-36 per bone dry ton) compared to a value of about \$13 per green ton (about \$26-27 per bone dry ton). The net cost could be as high as \$5 per green ton for a total cost of \$60,000 per year for the Rogue Basin.

The land cost of storage for delayed (rather than eliminated, as in the case of chipping) burning would be considerably higher, making it the less desirable alternative from both an economic and environmental perspective.

COSTS TO STATE AND LOCAL GOVERNMENT AGENCIES

The proposal is intended to improve consistency between local and state open burning requirements.

The Rogue Valley Fire Chiefs' Association and local governments support the change in state rules for uniformity with recently adopted local ordinances.

The more restrictive open burning requirements may result in additional enforcement action by the Department, especially the Southwest Regional Office in Medford.

MLH:
RPT\AH15011
(8/14/91)

NOTICE OF PUBLIC HEARING

Hearing Dates: September 26,
27, 30 & October
1, 1991

Comments Due: October 2, 1991

WHO IS AFFECTED:

Individuals, especially those with woodstoves, and board product industries statewide, local governments, agricultural operations and industries in or near the Medford-Ashland, Klamath Falls, Grants Pass and La Grande PM₁₀ Nonattainment Areas.

WHAT IS PROPOSED:

The Department of Environmental Quality is proposing to amend OAR 340-20-047, the State of Oregon Clean Air Act Implementation Plan to:

- o Revise fine particulate (PM₁₀) Pollution Control Strategies for the Medford, Grants Pass and Klamath Falls areas;
- o Add a new PM₁₀ Control Strategy for the La Grande area;
- o Add new regulations for woodstoves, OAR Chapter 340, Division 34;
- o Add new contingency industrial particulate emission standards for PM₁₀ nonattainment areas, OAR Chapter 340, Division 21;
- o Revise the Medford/Grants Pass Particulate Standard Rules, OAR Chapter 340, Division 30;
- o Revise Board Products Particulate Emission Standard Rules, OAR Chapter 340, Division 25;
- o Revise Ambient Air Standard Rules, OAR Chapter 340, Division 31;
- o Revise Rogue Basin Open Burning Control Area rules, OAR Chapter 340, Division 23.

WHAT ARE THE HIGHLIGHTS:

The federal Clean Air Act requires states to submit PM₁₀ attainment Control Strategies for PM₁₀ Nonattainment Areas to the U.S. Environmental Protection Agency (EPA) by November 15, 1991. The Control Strategies specify how federal PM₁₀ air quality standards will be attained by the Act's deadline of December 31, 1994. They primarily rely on controlling PM₁₀ emissions from residential woodheating, industry and open burning.

ATTACHMENT D

The proposed rules which would implement PM₁₀ Control Strategies will:

- o Regulate residential woodheating according to new legislative authority including:
 - > Banning the sale of used, uncertified woodstoves statewide;
 - > allowing DEQ to prohibit woodheating on poor air quality days if local governments fail to adopt or implement such programs where needed;
 - > Requiring the destruction of uncertified woodstoves upon the sale of a home as a contingency measure if an area fails to attain compliance with the PM₁₀ standard by December 31, 1994.
- o Require industries in PM₁₀ nonattainment areas to meet Reasonably Available and Best Available Control Technology requirements of the Clean Air Act as a contingency measure if areas fail to attain compliance with the PM₁₀ standard by the Clean Air Act deadline.
- o Require tighter meteorological criteria for allowing open burning in the Rogue Basin Open Burning Control Area, and ban open burning from November through February in this area as a contingency if it fails to attain compliance with the PM₁₀ standard by the Clean Air Act deadline.
- o Address housekeeping/enforceability issues raised by EPA with respect to existing state regulations covering the Board Products Industry, Medford/Grants Pass Industrial Particulate Emission and Ambient Air Standards.

HOW TO COMMENT:

Copies of the complete proposed rule packages may be obtained from the Air Quality Division at 811 S.W. Sixth Avenue, Portland, OR 97204, or the regional office nearest you. For further information, call toll free 1-800-452-4011 (in Oregon), or contact:

Merlyn Hough at (503) 229-6446 (Medford-Ashland)
John Core at (503) 229-5380 (Klamath Falls)
Howard Harris at (503) 229-6086 (Grants Pass)
Brian Finneran at (503) 229-6278 (La Grande)
Andy Ginsburg at (503) 229-5581 (Industry)
David Collier at (503) 229-5177 (Woodstoves)

Public hearings will be held before a hearings officer at:

7:00 pm
September 26, 1991
Commission Hearing Room
Courthouse Annex
Klamath Falls, Oregon

7:00 pm
September 30, 1991
Smullin Center Auditorium
Rogue Valley Medical.Ctr.
Medford, Oregon

7:00 pm
September 27, 1991
City Council Chambers
101 NW "A" Street
Grants Pass, Oregon

7:00 pm
October 1, 1991
City Hall
1000 Adams Avenue
La Grande, Oregon

3:00 pm
October 1, 1991
DEQ Offices
811 SW Sixth Avenue
Portland, Oregon

Oral and written comments will be accepted at the public hearings. Written comments may be sent to the DEQ, but must be received no later than 5 pm, October 2, 1991.

WHAT IS THE NEXT STEP:

After public hearings, the Environmental Quality Commission may adopt rule amendments and Control Strategies identical to the proposed amendments, adopt modified rule amendments and Control Strategies on the same subject matter, or decline to act. The adopted rules and Control Strategies will be submitted to the EPA as part of the State Clean Air Act Implementation Plan. The Commission's deliberation should come on November 7, 1991, 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.

YM:a
RPT\AH15041
(8/14/91)

POLLUTION CONTROL

468.295

more air contaminants which contribute to a condition of air pollution.

(4) "Air contamination source" means any source at, from, or by reason of which there is emitted into the atmosphere any air contaminant, regardless of who the person may be who owns or operates the building, premises or other property in, at or on which such source is located, or the facility, equipment or other property by which the emission is caused or from which the emission comes.

(5) "Air pollution" means the presence in the outdoor atmosphere of one or more air contaminants, or any combination thereof, in sufficient quantities and of such characteristics and of a duration as are or are likely to be injurious to public welfare, to the health of human, plant or animal life or to property or to interfere unreasonably with enjoyment of life and property throughout such area of the state as shall be affected thereby.

(6) "Area of the state" means any city or county or portion thereof or other geographical area of the state as may be designated by the commission.

(7) "Woodstove" means a wood fired appliance with a closed fire chamber which maintains an air-to-fuel ratio of less than 30 during the burning of 90 percent or more of the fuel mass consumed in the low firing cycle. The low firing cycle means less than or equal to 25 percent of the maximum burn rate achieved with doors closed or the minimum burn achievable. [Formerly 449.760; 1983 c.333 §1]

468.280 Policy. (1) In the interest of the public health and welfare of the people, it is declared to be the public policy of the State of Oregon:

(a) To restore and maintain the quality of the air resources of the state in a condition as free from air pollution as is practicable, consistent with the overall public welfare of the state.

(b) To provide for a coordinated state-wide program of air quality control and to allocate between the state and the units of local government responsibility for such control.

(c) To facilitate cooperation among units of local government in establishing and supporting air quality control programs.

(2) The program for the control of air pollution in this state shall be undertaken in a progressive manner, and each of its successive objectives shall be sought to be accomplished by cooperation and conciliation among all the parties concerned. [Formerly 449.765]

468.285 Purpose. It is the purpose of the air pollution laws contained in ORS 448.305, 454.010 to 454.040, 454.205 to 454.255, 454.405, 454.425, 454.505 to 454.535, 454.605 to 454.745 and this chapter to safeguard the air resources of the state by controlling, abating and preventing air pollution under a program which shall be consistent with the declaration of policy in this section and with ORS 468.280. [Formerly 449.770]

468.290 Application of air pollution laws. Except as provided in this section and in ORS 468.450, 476.380 and 478.960, the air pollution laws contained in this chapter do not apply to:

(1) Agricultural operations and the growing or harvesting of crops and the raising of fowls or animals, except field burning which shall be subject to regulation pursuant to ORS 468.140, 468.150, 468.455 to 468.480 and this section;

(2) Use of equipment in agricultural operations in the growth of crops or the raising of fowls or animals, except field burning which shall be subject to regulation pursuant to ORS 468.140, 468.150, 468.455 to 468.480 and this section;

(3) Barbecue equipment used in connection with any residence;

(4) Agricultural land clearing operations or land grading;

(5) Heating equipment in or used in connection with residences used exclusively as dwellings for not more than four families, except woodstoves which shall be subject to regulation under this section and ORS 468.630 to 468.655;

(6) Fires set or permitted by any public agency when such fire is set or permitted in the performance of its official duty for the purpose of weed abatement, prevention or elimination of a fire hazard, or instruction of employees in the methods of fire fighting, which in the opinion of the agency is necessary;

(7) Fires set pursuant to permit for the purpose of instruction of employees of private industrial concerns in methods of fire fighting, or for civil defense instruction; or

(8) The propagation and raising of nursery stock, except boilers used in connection with the propagation and raising of nursery stock. [Formerly 449.775; 1975 c.559 §3; 1983 c.333 §2; 1983 c.730 §3]

468.295 Air purity standards; air quality standards. (1) By rule the commission may establish areas of the state and prescribe the degree of air pollution or air contamination that may be permitted therein, as air purity standards for such areas.

curate determination of the nature, extent, quantity and degree of air contaminants which are emitted as the result of operation of the source.

(3) All sampling and testing shall be conducted in accordance with methods used by the department or equivalent methods of measurement acceptable to the department.

(4) All sampling and testing performed under this section shall be conducted in accordance with applicable safety rules and procedures established by law. [Formerly 449.702]

468.345 Variances from air contamination rules and standards; delegation to local governments; notices. (1) The commission may grant specific variances which may be limited in time from the particular requirements of any rule or standard to such specific persons or class of persons or such specific air contamination source, upon such conditions as it may consider necessary to protect the public health and welfare. The commission shall grant such specific variance only 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; 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.

(2) The commission may delegate the power to grant variances to legislative bodies of local units of government or regional air quality control authorities in any area of the state on such general conditions as it may find appropriate. However, if the commission delegates authority to grant variances to a regional authority, the commission shall not grant similar authority to any city or county within the territory of the regional authority.

(3) A copy of each variance granted, renewed or extended by a local governmental body or regional authority shall be filed with the commission within 15 days after it is granted. The commission shall review the variance and the reasons therefor within 60 days of receipt of the copy and may approve, deny or modify the variance terms. Failure of the commission to act on the variance within the 60-day period shall be considered a determination that the variance granted by

the local governmental body or regional authority is approved by the commission.

(4) In determining whether or not a variance shall be granted, the commission or the local governmental body or regional authority shall consider the equities involved and the advantages and disadvantages to residents and to the person conducting the activity for which the variance is sought.

(5) A variance may be revoked or modified by the grantor thereof after a public hearing held upon not less than 10 days' notice. Such notice shall be served upon all persons who the grantor knows will be subjected to greater restrictions if such variance is revoked or modified, or are likely to be affected or who have filed with such grantor a written request for such notification. [Formerly 449.810]

468.350 Air and water pollution control permit for geothermal well drilling and operation; enforcement authority of director. (1) Upon issuance of a permit pursuant to ORS 522.115, the director shall accept applications for such appropriate permits under air and water pollution control laws as are necessary for the drilling of a geothermal well for which the permit has been issued and shall, within 30 days, act upon such application.

(2) The director shall continue to exercise enforcement authority over a permit issued pursuant to this section; and shall have primary responsibility in carrying out the policy set forth in ORS 468.280, 468.710 and rules adopted pursuant to ORS 468.725, for air and water pollution control at geothermal wells which have been unlawfully abandoned, unlawfully suspended, or completed. [1975 c.532 §34]

468.355 Open burning of vegetative debris; local government authority. (1) The Environmental Quality Commission shall establish by rule periods during which open burning of vegetative debris from residential yard cleanup shall be allowed or disallowed based on daily air quality and meteorological conditions as determined by the department.

(2) After June 30, 1982, the commission may prohibit residential open burning in areas of the state if the commission finds:

(a) Such prohibition is necessary in the area affected to meet air quality standards; and

(b) Alternate disposal methods are reasonably available to a substantial majority of the population in the affected area.

(3)(a) Nothing in this section prevents a local government from taking any of the following actions if that governmental entity otherwise has the power to do so:

(A) Prohibiting residential open burning;

(B) Allowing residential open burning on fewer days than the number of days on which residential open burning is authorized by the commission; or

(C) Taking other action that is more restrictive of residential open burning than a rule adopted by the commission under this section.

(b) Nothing in this section affects any local government ordinance, rule, regulation or provision that:

(A) Is more restrictive of residential open burning than a rule adopted by the commission under this section; and

(B) Is in effect on August 21, 1981.

(c) As used in this subsection, "local government" means a city, county, other local governmental subdivision or a regional air quality control authority established under ORS 468.505. [1981 c.765 §2]

ACCREDITATION OF CERTAIN INDOOR AIR POLLUTION SERVICES

468.357 Indoor air quality sampling accreditation and certification programs.

(1) The Environmental Quality Commission shall establish a voluntary accreditation program for those providing indoor air quality sampling services or ventilation system evaluations for public areas, office workplaces or private residences. Provisions shall be made to accept accreditation of other state programs if they are comparable with the accreditation program established under this section.

(2) The Environmental Quality Commission shall establish a voluntary contractor certification program for contractors providing remedial action for residential indoor air pollution. Provisions shall be made to accept accreditation of other state programs if they are comparable with the accreditation program established under this section. [1989 c.1070 §9]

Note: 468.357 to 468.359 were enacted into law by the Legislative Assembly but were not added to or made a part of ORS chapter 468 or any series therein by legislative action. See Preface to Oregon Revised Statutes for further explanation.

468.358 Fees; accreditation and certification programs. The Environmental Quality Commission shall establish by rule a schedule of annual fees, not to exceed \$500 per participating contractor, to pay the Department of Environmental Quality's costs in operating the:

(1) Voluntary accreditation program under ORS 468.357 (1); and

(2) Voluntary contractor certification program under ORS 468.357 (2). [1989 c.1070 §12]

Note: See note under 468.357.

468.359 Pilot programs. (1) Upon the advice of the Indoor Air Pollution Task Force, the Environmental Quality Commission may establish a pilot program for any product designed for household or office use that is not adequately regulated by federal law that may be a threat to human health by contaminating indoor air.

(2) The Environmental Quality Commission may establish a voluntary product-labeling pilot program to identify products with a low potential for causing indoor air pollution. [1989 c.1070 §11]

Note: See note under 468.357.

MOTOR VEHICLE POLLUTION CONTROL

468.360 Definitions for ORS 468.360 to 468.405. As used in ORS 468.360 to 468.405:

(1) "Certified system" means a motor vehicle pollution control system for which a certificate of approval has been issued under ORS 468.375 (3).

(2) "Factory-installed system" means a motor vehicle pollution control system installed by the manufacturer which meets criteria for emission of pollutants in effect under federal laws and regulations applicable on September 9, 1971, or which meets criteria adopted pursuant to ORS 468.375 (1), whichever criteria are stricter.

(3) "Motor vehicle" includes any self-propelled vehicle used for transporting persons or commodities on public roads and highways, but does not include a vehicle of special interest as that term is defined in ORS 801.605, if the vehicle is maintained as a collector's item and used for exhibitions, parades, club activities and similar uses but not used primarily for the transportation of persons or property.

(4) "Motor vehicle pollution control system" means equipment designed for installation on a motor vehicle for the purpose of reducing the pollutants emitted from the vehicle, or a system or engine adjustment or modification which causes a reduction of pollutants emitted from the vehicle. [Formerly 449.949; 1975 c.670 §4; 1983 c.338 §932]

468.365 Legislative findings. For purposes of ORS 468.360 to 468.405, the Legislative Assembly finds:

(1) That the emission of pollutants from motor vehicles is a significant cause of air pollution in many portions of this state.

(2) That the control and elimination of such pollutants are of prime importance for the protection and preservation of the public health, safety and well-being and for the prevention of irritation to the senses, inter-

REQUEST FOR EQC ACTION

Meeting Date: August 22, 1991
Agenda Item: G
Division: Air Quality
Section: Planning and Development

SUBJECT:

Hearing Authorization: Residential woodheating rule amendments.

PURPOSE:

Incorporate new residential woodheating emission control requirements from HB 2175 into the State Implementation Plan to meet Clean Air Act requirements for PM₁₀ control strategies.


ACTION REQUESTED:

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

- Authorize Rulemaking Hearing
 - Adopt Rules
 - Proposed Rules
 - Rulemaking Statements
 - Fiscal and Economic Impact Statement
 - Public Notice

- Attachment A
- Attachment B
- Attachment C
- Attachment D

- Issue a Contested Case Order
- Approve a Stipulated Order
- Enter an Order
 - Proposed Order

- Attachment 

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



<input type="checkbox"/> Approve Department Recommendation	
<input type="checkbox"/> Variance Request	Attachment <input type="checkbox"/>
<input type="checkbox"/> Exception to Rule	Attachment <input type="checkbox"/>
<input type="checkbox"/> Informational Report	Attachment <input type="checkbox"/>
<input type="checkbox"/> Other: (specify)	Attachment <input type="checkbox"/>

DESCRIPTION OF REQUESTED ACTION:

The 1990 Clean Air Act amendments require states to revise their State Implementation Plans (SIP) to more thoroughly address PM₁₀ nonattainment areas. State PM₁₀ control strategies must now contain specific enforceable reasonably available control measures for among other sources, residential woodheating. The Clean Air Act amendments also require that the PM₁₀ control strategies contain contingency measures.

Three new residential woodheating rules are proposed as necessary components of PM₁₀ control strategies, to meet control measure and contingency measure requirements of the Clean Air Act. These rules were authorized by HB 2175, and cover the following areas:

- 1) Prohibition on the sale of used non-certified woodstoves.
- 2) State backup enforcement of residential woodheating curtailment in PM₁₀ nonattainment areas.
- 3) Requirement for the removal and destruction of used non-certified woodstoves upon sale of a home in a PM₁₀ nonattainment area that does not attain compliance with the standard by December 31, 1994.

A new Division in OAR Chapter 340 has been created under which all rules pertaining to residential woodheating are being consolidated. New Division 34 will contain all new rules regarding residential woodheating, and will also contain the current woodstove certification rules.

The Woodstove Certification Program rules currently in Division 21 have been renumbered and incorporated into Division 34. In the interest of structure and clarity some minor changes have been made to the organization and text of the Woodstove Certification rules; however, no substantive changes have been made.

AUTHORITY/NEED FOR ACTION:

- | | |
|--|---------------------|
| <input checked="" type="checkbox"/> Required by Statute: <u>HB2175; Sections 10-11</u> | Attachment <u>E</u> |
| Enactment Date: <u>August 5, 1991</u> | |
| <input type="checkbox"/> Statutory Authority: _____ | Attachment _____ |
| <input type="checkbox"/> Pursuant to Rule: _____ | Attachment _____ |
| <input checked="" type="checkbox"/> Pursuant to Federal Law/Rule: <u>Clean Air Act</u> | Attachment _____ |
| <input type="checkbox"/> Other: _____ | Attachment _____ |
| <input checked="" type="checkbox"/> Time Constraints: | |

Public hearings need to be held, comments need to be considered and addressed, and final Environmental Quality Commission (EQC) action taken by November 8, 1991 in order to meet the November 15, 1991 Clean Air Act deadline for SIP submittal to the Environmental Protection Agency (EPA).

DEVELOPMENTAL BACKGROUND:

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

REGULATED/AFFECTED COMMUNITY CONSTRAINTS/CONSIDERATIONS:

1: Prohibition on the sale of used, non-certified woodstoves.

Section 10b of HB 2175 states that on or after the effective date of the act no person shall advertise for sale, offer for sale, or sell a used woodstove unless it has been certified by the Department under ORS 468.655(1) on or after July, 1 1986. Under section 10a of HB 2175 the State Building Code Agency is charged with implementing the prohibition on the installation of used, non-certified stoves. Exemptions are provided for cookstoves and "antique" stoves.

Prohibiting the sale of used, non-certified woodstoves may adversely affect a used, non-certified stove owner, by decreasing the resale value of their stove. (See fiscal and Economic Impact Statement, attachment C). However, an owner may still sell a used, non-certified stove out of state. Some small financial benefit may be gained by recycling the stove, and receiving payment for its scrap metal value.

Woodstove retailers will receive an economic advantage by having the stove market restructured to allow only the sale of new, certified stoves.

2: State enforcement of residential woodheating curtailment

Section 11 (3) of HB 2175 authorizes the Environmental Quality Commission (EQC) to adopt rules, and the Department to operate and enforce a residential woodburning curtailment program, when and if a local government or regional authority has not adopted or is not adequately implementing a residential woodstove curtailment program required under the Clean Air Act.

Woodburning households in an area where the Department imposes a woodburning curtailment program would be required to use an alternative heating source for some portion of the winter heating season. The number of days where alternatives are required will fluctuate for each area depending on local weather and air quality conditions. Typically, curtailment days where woodburning is prohibited, range from 5 to 45 days per year, with an average extra cost to each household using an available alternate heat source of \$2 to \$4 per day of curtailment. Homes with woodstoves as the sole source of heat are exempt from curtailment under OAR 340-34-015.

3: Requirement for the removal and destruction of used, non-certified woodstoves upon sale of a home in a PM₁₀ nonattainment area after December 31, 1994.

Section 10c of HB 2175 requires that if a PM₁₀ nonattainment area fails to attain compliance with the standard by December 31, 1994 all woodstoves, other than cookstoves and antique stoves, that have not been certified by the Department of Environmental Quality shall be removed and destroyed upon sale of a home.

An adverse economic impact to a home seller will be reflected by a loss in the value of the stove due to the ban on resale of used, non-certified stoves. Stove removal costs and the cost of home repairs after stove removal will also impact the seller. Additionally, since woodstoves are typically considered a fixture there may be a minor decrease in the value of the home when the stove is removed, unless the home owner replaces it with a certified stove in which case the value of the home should be improved.

PROGRAM CONSIDERATIONS:

1: Prohibition on the sale of used, non-certified woodstoves.

A public information campaign will need to be undertaken by the Department to disseminate the new requirements regarding the prohibition on the sale of used, non-certified stoves, and enforcement actions taken as appropriate.

A high compliance rate is expected through the support of woodstove retailers as the woodheating industry supported this program in HB 2175. Surveillance and enforcement of the used stove ban will be integrated into the Department's certification program for new woodstoves, and should be able to be handled with existing resources.

2: State enforcement of residential woodheating curtailment

State enforcement of residential woodheating curtailment is needed as a backup strategy when local government fails to adopt or adequately implement a residential woodburning curtailment program required by the Clean Air Act. At this time only the city of Central Point has failed to implement a required curtailment program, having had their ordinance repealed by voters in November of 1990. It is hoped that new state backup legislative authority will encourage Central Point to maintain local control and readopt the necessary program.

The Department is planning at this time to implement a curtailment program in Central Point to ensure meeting Clean Air Act requirements. EPA funding assistance has been requested to provide the additional resources needed by the department to conduct this program.

3: Requirement for the removal and destruction of used non-certified woodstoves upon sale of a home in a PM₁₀ nonattainment area after January 1, 1995.

Between now and December 1994, the Department would pursue the development of an advisory committee comprised of representatives from Oregon title companies, the Oregon Association of Realtors, and the State Real Estate Agency. The goal of the advisory group would be to outline the most efficient means to disseminate information about the sale requirements, and to help ensure that the stove removal and destruction requirement is carried out with the least expenditure of department resources, and the highest compliance level.

The Department's existing woodheating control program staff should be able to handle this work. If necessary, EPA funding will be requested to provide additional staffing.

ALTERNATIVES CONSIDERED BY THE DEPARTMENT:

1: Prohibition on the sale of used, non-certified woodstoves.

None. The prohibition on the sale of used, non-certified woodstoves is required under HB 2175, and is a necessary control strategy element for PM₁₀ nonattainment areas.

2: State enforcement of residential woodheating curtailment

- a) Delay adopting a state rule, and encourage Central Point to readopt an adequate curtailment plan. However, without an enforceable local or state curtailment program in every portion of the entire Medford nonattainment area, the EPA will be unable to approve the Medford SIP. If a state fails to fulfill its responsibilities, EPA is required to impose sanctions and ultimately prepare a Federal Implementation Plan (FIP) to address the PM₁₀ problems.
- b) Adopt state curtailment program for the city of Central Point alone, and only go to the EQC for rulemaking if and when they have defaulted in their responsibility to adopt or implement a local curtailment program.

3: Requirement for the removal and destruction of used, non-certified woodstoves upon sale of a home in a PM₁₀ nonattainment area after January 1, 1995.

None. The removal and destruction of used, non-certified stoves upon home sale is required in HB 2175. Additionally, EPA requires that contingency measures for the reduction of emissions from residential woodheating be adopted and approvable as part of the State Implementation Plan by November 15, 1991. The stove removal and destruction rule is the only residential woodheating contingency measure the Department currently has authority to propose for adoption.

Meeting Date: August 22, 1991
Agenda Item: G
Page 7

ISSUE FOR THE COMMISSION:

In light of the necessity to meet the requirements of the Clean Air Act, HB 2175 states that if a local government or regional air pollution authority has not adopted or is not adequately implementing a woodheating curtailment program the EQC may adopt by rule and the Department may operate and enforce a program to curtail residential woodheating during periods of air stagnation.

The time delay due to the schedule of administrative requirements for an EQC adoption of each individual curtailment program could, on occasion, inhibit the timely prevention of local air pollution episodes if a local government has failed in its responsibilities to curtail woodheating. The Department has consulted with the Department of Justice regarding the language of HB 2175, and has received confirmation that the EQC may, if desired, delegate the authority to trigger a state curtailment program to the Department.

The Department proposes that the EQC adopt a generic state curtailment program, and delegate authority to the Department to initiate a state curtailment program in any area of the State where the Department has determined that the program is required, and that state intervention is justified.

This alternative would allow the Department to respond quickly if a local government or regional authority chose not to adopt or enforce a local curtailment program just before a curtailment deadline. With the future funding status of local and regional air pollution programs subject to anticipated cutbacks, the Department should be in a position to act as quickly and efficiently as possible to maintain the integrity of PM₁₀ control strategies in an area.

The delegation of authority to the Department to initiate a state curtailment program would also allow the Department to respond quickly to an air pollution emergency situation anywhere in the state. This type of action is required by the Department's Emergency Action Plan provisions.

DEPARTMENT RECOMMENDATION FOR ACTION, WITH RATIONALE:

The Department recommends that the Commission authorize a public hearing on the residential woodheating rules proposed for Division 34. Each of these rules are key components to the overall emission reduction strategies for PM₁₀ nonattainment areas; and are required for the Department to submit a fully approvable State Implementation Plan to the Environmental Protection Agency within the time frame

Meeting Date: August 22, 1991
Agenda Item: G
Page 8

required by the Clean Air Act, and to enforce provisions of
HB 2175 in a timely manner.

CONSISTENCY WITH STRATEGIC PLAN, AGENCY POLICY, LEGISLATIVE
POLICY:

The proposed residential woodheating rules are consistent
with legislative and agency policy to restore and maintain
acceptable air quality statewide.

ISSUES FOR COMMISSION TO RESOLVE:

Should the Commission delegate its authority to initiate a
state residential woodburning curtailment program to the
Department.

INTENDED FOLLOW UP ACTIONS:

1. File hearing notice with the Secretary of State.
2. Advertise public hearing through newspapers.
3. Hold public hearings
4. Review oral and written testimony, and revise proposed
rules as appropriate.
5. Return to Commission for final rule adoption.

Approved:

Director: Bill Ham

Division: Steve Greenwood

Section: John Kawalazysk

Report Prepared By: David L. Collier

Phone: 229-5177

Date Prepared: July 31, 1991

MLH:ADG:LDB:a
RPT\AH15030 (August 14, 1991)

DIVISION 34

RESIDENTIAL WOODHEATING

Purpose

340-34-001

The Clean Air Act amendments of 1990 require that specific measures be undertaken in a nonattainment area to attain the national primary ambient air quality standard by the applicable attainment date. The purpose of these rules is to establish control strategy and contingency measures for residential woodheating in PM₁₀ nonattainment areas, and to address residential woodburning curtailment under the statewide emergency action plan.

Definitions

340-34-005 ~~{340-21-100}~~

Unless otherwise required by context, as used in this Division:

- (1) "Accredited" means a woodstove testing laboratory holds a valid certificate of accreditation issued by the Department.
- (2) "Administrator" means the administrator of the Environmental Protection Agency or the administrator's authorized representative.
- (3) "Antique Woodstove" means a woodstove built before 1940 that has an ornate construction and a current market value substantially higher than a common woodstove manufactured in the same time period.
- (4) ~~[(3)]~~ "Audit test" means a test conducted by the Department to verify a laboratory's certification test results.
- (5) "Commission" means the Environmental Quality Commission.
- (6) ~~[(4)]~~ "Consumer" means any person who buys a woodstove for personal use.
- (7) "Cookstove" means an indoor woodburning appliance the design and primary purpose of which is to cook food.
- (8) "Curtailment" means a period during which woodburning is prohibited due to the existence of an air stagnation condition.

- (9) ~~(5)~~ "Dealer" means any person engaged in selling woodstoves to retailers or other dealers for resale. A dealer which is also an Oregon retailer shall be considered to be only a retailer for purposes of these rules.
- (10) "Destroy" means to demolish to a such an extent that restoration is impossible.
- (11) ~~(6)~~ "Department" means the Oregon Department of Environmental Quality.
- (12) "Director" means the Director of the Department or the Director's authorized delegates.
- (13) ~~(7)~~ "EPA" means the United States Environmental Protection Agency.
- (14) ~~(8)~~ "Federal Regulations" means Volume 40 CFR Part 60, Subpart AAA, Sections 60.530 through 60.539b, dated July 1, 1990.
- (15) "Fireplace" means a framed opening made in a chimney to hold an open fire.
- (16) ~~(9)~~ "Heat output" means the heat output (Btu/hour) of a woodstove during one test run, measured under test conditions prescribed by OAR 340-21-120.
- (17) ~~(10)~~ "Manufacturer" means any person who imports a woodstove, constructs a woodstove or parts for woodstoves.
- (18) ~~(11)~~ "New Woodstove" means any woodstove that has not been sold, bargained, exchanged, given away or has not had its ownership transferred from the person who first acquired the woodstove from the manufacturer's dealer or agency, and has not been so used to have become what is commonly known as "second hand" within the ordinary meaning of that term.
- (19) ~~(12)~~ "Overall efficiency (%) over the range of heat outputs tested" means the weighted average combustion efficiency (%) multiplied by the weighted average heat transfer efficiency (%) measured under test conditions (range of heat outputs) and calculated according to specific procedures prescribed by OAR 340-21-120(1). This definition is applicable to the Stack Loss Methodology. For the Calorimeter Room Method, the weighted average overall efficiency means the useful heat output released to the room, divided by the total heat potential of the fuel consumed.

(20) "Pelletstove" means a woodburning heating appliance which uses wood pellets as its primary source of fuel.

(21) ~~{(13)}~~ "Retailer" means any person engaged in the sale of woodstoves directly to consumers.

(22) "Used Woodstove" means any woodstove that has been sold bargained, exchanged, given away, or has had its ownership transferred from a retailer, manufacturer's dealer or agent to a consumer.

(23) ~~{(14)}~~ "Weighted average" means the weighted average of the test results to the distribution of home heating needs as prescribed in the Federal regulations, 40 CFR Part 40, Subpart AAA.

(24) ~~{(15)}~~ "Woodstove"/"Woodheater" means an enclosed, woodburning appliance capable of and intended for space heating and domestic water heating that meets all of the following criteria:

- (a) An air-to-fuel ratio in the combustion chamber averaging less than 35-to-1 as determined by the test procedure prescribed in federal regulations 40 CFR part 60, subpart AAA, §60.534 performed at an accredited laboratory;
- (b) A usable firebox volume of less than 20 cubic feet,
- (c) A minimum burn rate less than 5 kg/hr as determined by the test procedure prescribed in federal regulations 40 CFR part 60, subpart AAA, §60.534 performed at an accredited laboratory; and
- (d) A maximum weight of 800 kg. In determining the weight of an appliance for these purposes, fixtures and devices that are normally sold separately, such as flue pipe, chimney, and masonry components that are not an integral part of the appliance or heat distribution ducting, shall not be included.

Requirements for Sale of ~~New~~ Woodstoves ~~in Oregon~~

~~340-34-010~~ ~~340-21-105~~

(1). Requirements applicable to the sale of new woodstoves

~~(1)~~(a) On and after July 1, 1990 a person shall not advertise to sell, offer to sell, or sell a new woodstove in Oregon unless:

~~(a)~~(A) The woodstove has been tested, certified and labeled for emission performance in accordance with criteria, emission standards, and procedures specified in the federal regulations, 40 CFR Part 60, Subpart AAA; and

~~(b)~~(B) The woodstove has been tested for heating efficiency and certified by the Department in accordance with criteria and procedures in ~~OAR 340-21-120~~ OAR 340-34-055; and

~~(c)~~(C) The woodstove is labelled for emission performance and heating efficiency as specified in ~~OAR-340-21-135~~ OAR 340-34-070; provided, however, that section (1) of this rule shall not apply to any sale from any manufacturer or dealer; to any Oregon manufacturer or dealer; or to any out-of-state manufacturer, dealer or retailer; or to any offer or advertisement for such sale directed only to such a manufacturer, dealer or out-of-state retailer.

~~(2)~~(b) No manufacturer, dealer, ~~or~~ retailer or individual shall alter the permanent certification label in any way from the label approved by the Administrator pursuant to Federal Regulations, 40 CFR part 60, subpart AAA, § 60.538(i).

~~(3)~~(c) No manufacturer, dealer or retailer shall alter the removable label in any way from the label approved by the Department pursuant to ~~OAR-340-21-155~~ OAR 340-34-080.

(2). Requirements applicable for the sale of used woodstoves. On or after November 2, 1991 a person shall not advertise to sell, offer to sell, or sell a used woodstove unless:

(a) The woodstove was certified by the Department on or after July 1, 1986, in accordance with emission performance and heating efficiency criteria applicable at the time of certification;

(b) The woodstove has permanently attached either an emission performance label authorized by the Department or the Environmental Protection Agency.

(3) Section (2) of this rule concerning used woodstoves that have not been certified shall not apply to the following:

(a) the selling by a consumer of an used woodstove that has not been certified by the Department to a person in the business of reusing, reclaiming or recycling scrap metal to be destroyed or used as scrap metal;

(b) the remittance of an used woodstove that has not been certified by the Department by a consumer to a retailer of certified woodstoves for the purpose of receiving a reduction in price on a new certified woodstove.

~~[(4) Violators of any of the above rules may be subject to civil penalties pursuant to GAR Chapter 340, Divisions 11 and 12 or other remedies prescribed by rule or statute.]~~

Exemptions

340-34-015 [~~340-21-110~~]

(1) A pelletstove is exempt from the following requirements:

- (a) ~~[To be considered eligible for exemption from the requirements and standards of these rules, pellet burning appliances must be tested for air to fuel ratio in strict conformance]~~ OAR 340-34-050 through 340-34-110, woodstove certification and OAR 340-34-010(1), requirements applicable to the sale of new woodstoves provided the manufacturer holds a valid letter of exemption from the Department which verifies that the pelletstove exceeds an air to fuel ratio in the combustion chamber of greater than 35-to-1 as determined in accordance with criteria and procedures of EPA Method 28A as set forth in the federal regulations, 40 CFR Part 60, Subpart AAA; ~~[, to determine that the unit qualifies, as exempt, from the definition of a woodstove.]~~
- (b) OAR 340-34-010(2), requirements applicable to the sale of used woodstoves;
- (c) OAR 340-34-150 through 340-34-175, woodburning curtailment; and
- (d) OAR 340-34-200 through 340-34-215, woodstove requirements applicable after December 31, 1994.

(2) An antique stove is exempt from the requirements of:

- (a) OAR 340-34-010(2), requirements applicable to the sale of used woodstoves; and
- (b) OAR 340-34-200 through 340-34-215, woodstove requirements applicable after December 31, 1994.

(3) A cookstove is exempt from the requirements of Chapter 340, Division 34, except for OAR 340-34-150 through 340-34-175, woodburning curtailment.

(4) A woodburning fireplace, woodstove or appliance operated within a household classified to be at less than or equal to 125 percent of the federal poverty level is exempt from the requirement of OAR 340-34-150 through 340-34-175, woodburning curtailment. The federal poverty level is published in the Federal Register, Volume 56, Number 34, February 20, 1990, page 6859, Department of Health and Human Services.

(5) A woodstove operated in a residence that is equipped solely with woodheat is exempt from the requirements of OAR 340-34-150 through 340-34-175, woodburning curtailment.

Civil Penalties

340-34-020

Violations of Chapter 340, Division 34 are subject to Chapter 340, Division 12, Enforcement Procedures and Civil Penalties.

Woodstove Certification Program

Emissions Performance Standards and Certification

340-34-050 [~~340-21-115~~]

- (1) Unless exempted or not regulated as an affected facility under § 60.530 of the federal regulation, 40 CFR part 60, subpart AAA, new woodstoves advertised for sale, offered for sale or sold in Oregon between July 1, 1990 and June 30, 1992 shall be certified by the Administrator pursuant to federal regulation as complying with the particulate matter emission limits specified in the federal regulations, 40 CFR Part 60, Subpart AAA, § 60.532(a).
- (2) Unless exempted or not regulated as an affected facility under §60.530 of the Federal Regulation, 40 CFR Part 60, Subpart AAA, new woodstoves advertised for sale, offered for sale, or sold in Oregon on or after July 1, 1992 shall be certified by the Administrator pursuant to federal regulation as complying with the particulate matter emission limits specified in the federal regulations, 40 CFR Part 40, Subpart AAA, § 60.532(b).

Efficiency Testing Criteria and Procedures

340-34-055 [~~340-21-120~~]

- (1) To be considered eligible for certification, a woodstove must be tested for efficiency in strict conformance with criteria and procedures contained in the document Standard Method for Measuring the Emissions and Efficiencies of Residential Woodstoves dated June 8, 1984, and incorporated herein by reference and on file at the Department, or in strict conformance with criteria and procedures in Federal Regulations 40 CFR 60 Appendix J, if found to be equivalent by the Department.
- (2) All testing for certification purposes, using the Standard Method for Measuring the Emissions and Efficiencies of Residential Woodstoves, shall be conducted by a stove testing laboratory accredited in accordance with procedures specified in [~~OAR-340-21-160.~~] OAR 340-34-085
- (3) The Department may permit minor changes in the testing criteria and procedures specified in [~~OAR-340-21-120(2)~~] OAR 340-34-055 which the Department believes does not affect its accuracy providing such changes are approved in writing by the Department prior to the actual conducting of such tests.
- (4) All testing for certification purposes using the federal regulation 40 CFR 60 Appendix J, if found to be equivalent by the Department, shall be conducted by an accredited laboratory.

General Certification Procedures

340-34-060 [~~340-21-125~~]

- (1) Any woodstove manufacturer or dealer wishing to obtain certification of a woodstove shall file an application with the Department.
- (2) An application for certification must include:
 - (a) One complete copy of the EPA application and attachments as specified in the federal regulations, 40 CFR Part 60, Subpart AAA, §60.533(a,b,c,d);
 - (b) A copy of the valid Certificate of Compliance issued by the Administrator, pursuant to federal regulation 40 CFR Part 60, Subpart AAA, §60.533;
 - (c) All test data and support documentation showing that the woodstove has been tested for efficiency in accordance with [~~OAR-340-21-120~~] OAR 340-34-055;
 - (d) A non-refundable certification fee, payable to the Department at the time the application is submitted to the Department, is required for each stove model seeking certification. The fee is \$500 for each model submitted by the manufacturer.
- (3) The Department will promptly review an application for certification and:
 - (a) Notify the applicant in writing within 30 days of receipt of the applications, of any deficiencies in the applications that cause the application to be incomplete;
 - (b) Notify the applicant within 60 days of receipt of a completed application whether certification is granted or denied pursuant to sections (4) and (7) of this rule.
- (4) When all preceding requirements have been met, the Department will issue or deny a certification document to the manufacturer or dealer for the specified woodstove.
- (5) If the Department grants certification, the certification status shall be effective for no longer than five years unless extended or terminated by rule or order.
- (6) An application for a new document of certification shall be made by submitting a completed application including retests and fees at least 60 days prior to expiration of certification. The Department may waive the retest and fees if the applicant demonstrates the previous evidence used to

certify the woodstove has not changed and remains reliable and applicable.

- (7) If the Department denies certification of a woodstove, the Department will notify the manufacturer or dealer in writing of the opportunity for hearing pursuant to OAR Chapter 340, Division 11.

Changes in Woodstove Design
340-34-065 [~~340-21-130~~]

Certification of woodstoves shall be valid for only the specific model, design, plans and specifications which were originally submitted, tested and approved for certification. Any modification to the model, design, plans or specifications shall cause the certification to be ineffective and any so modified woodstoves to be uncertified, unless prior to making such modification the certification holder submits the proposed modification to the Administrator for approval, and the Administrator approves it.

Labelling Requirements
340-34-070 [~~340-21-135~~]

Woodstoves which must be labelled pursuant to [~~OAR-340-21-105~~] OAR 340-34-010 shall have affixed to them:

- (1) A permanent label, in accordance with Federal Regulations 40 CFR 60, Subpart AAA, §60.536.
- (2) A point-of-sale removable label;
 - (a) If the woodstove was tested for efficiency in conformance with criteria and procedures contained in the document Standard Method for Measuring the Emissions and Efficiencies of Residential Woodstoves, the label must be approved by the Department, verify certification and show the heating efficiency [~~and heat output range~~] of the appliance. The label shall be affixed to the appliance at the point-of-sale near the front and top of the stove and remain affixed until sold and delivered to the consumer.
 - (b) If the woodstove was tested for efficiency in conformance with criteria and procedures in Federal Regulations 40 CFR 60, Appendix J, the point-of-sale label shall show the measured efficiency in accordance with the requirements in Federal Regulations 40 CFR 60, Subpart AAA, §60.536.

Removable Label

340-34-075 ~~{340-21-150}~~

- (1) For a woodstove with a heating efficiency measured in accordance with ~~{OAR-340-21-120(1)}~~ OAR 340-34-055, an additional point-of-sale removable label shall be affixed and shall contain the following information:
 - (a) "Oregon Tested Efficiency (Ave.) _____%", weighted average of tested values;
 - ~~{(b) Heat-output-range,-tested-values}~~.
 - (b) ~~{(e)}~~ Manufacturer of appliance;
 - (c) ~~{(d)}~~ Model of appliance;
 - (d) ~~{(e)}~~ Design number of model;
 - (e) ~~{(f)}~~ A statement acknowledging EPA emission certification meets Oregon emission requirements;
 - (f) ~~{(g)}~~ The statement "Performance may vary from test values depending on actual home operating conditions".
- (2) The label shall be visibly located on the appliance when the appliance is available for inspection by consumers.
- (3) This label may not be combined with any other label or with other information.
- (4) The label shall be attached to the appliance in such a way that it can be easily removed by the consumer upon purchase. For instance, the label may be attached by adhesive, wire, or string.

Label Approval

340-34-080 ~~{340-21-155}~~

- (1) Removable label:
 - (a) For a woodstove with a heating efficiency measured in accordance with OAR 340-34-055 ~~{OAR-340-21-120(1)}~~, the Department will provide the manufacturer or dealer, at the time of certification with:
 - (A) A copy of the standardized printed removable label, with all printing specifications; and
 - (B) The specific information that shall be printed in the spaces on the label by the manufacturer.

- (b) The manufacturer or dealer shall submit to the Department for review:
 - (A) A proof copy of the proposed label with the required information printed on the labels;
 - (B) The method of attaching the removable label to the woodstove;
 - (C) The name, telephone number, and address of the label printer.
- (c) Within 14 days of receipt of all the information required in subsection (b) of this section, the Department will approve or deny use of the proposed label.
- (2) The manufacturer shall submit to the Department three final printed permanent, and three final printed removable labels within one month of receiving the labels from the printer.

Laboratory Accreditation Requirements

340-34-085 [~~340-21-160~~]

A laboratory submitting test data pursuant to requirements in this rule shall have a valid certificate of accreditation issued by the Department. A laboratory may initiate application for an accreditation certificate by submitting written documentation to the Department that accreditation criteria contained in OAR 340-34-090 [~~OAR-340-21-165~~] are met. In addition, the laboratory must demonstrate stove testing proficiency pursuant to OAR 340-34-095, [~~OAR-340-21-170~~] in order to qualify for accreditation.

Accreditation Criteria

340-34-090 [~~340-21-165~~]

- (1) All laboratories shall meet the following criteria and standards at the time of application and shall continue to meet these criteria as a condition of maintaining accreditation:
 - (a) Hold a valid certificate of accreditation for emission testing issued by the Administrator.
 - (b) Shall hold a valid certificate of efficiency accreditation issued by the Department. To be eligible for efficiency accreditation the laboratory must demonstrate to the Department:
 - (A) Conformance with the criteria and procedures contained in the document Standard Method for Measuring the Emission and Efficiency of Residential Woodstoves and maintain an efficiency

computer program that produces results comparable to the Department's using a standard data set provided by the Department, or;

- (B) Conformance and proficiency with the criteria and procedures in Federal Regulation 40 CFR 60, Appendix J, if found to be equivalent by the Department.
- (c) Shall meet all of the requirements as prescribed by federal regulation, 40 CFR Part 60, Subpart AAA, Section 60.535;
- (d) Neither the laboratory owners or business affiliates shall discriminate in management or business practices against any person or business because of race, creed, color, religion, sex, age, or national origin. In addition, neither the laboratory nor its owners or operators shall be certified by any association or members of any association that discriminates in management or business practices against any person or business because of race, creed, color, religion, sex, age, or national origin.

Application for Laboratory Efficiency Accreditation

340-34-095 ~~{340-21-170}~~

- (1) A laboratory applying for efficiency accreditation shall state in writing and demonstrate by providing documentation, that they comply with the criteria and standards in OAR 340-34-090 ~~{OAR-340-21-165}~~ at the time of application, and how they will continue to meet the criteria and standards on an on-going basis.
- (2) The laboratory shall notify the Department in writing within 30 calendar days should it become unable to conform to any of the criteria and standards in OAR 340-34-090 ~~{OAR-340-21-165}~~.
- (3) Deficiency in the application will be identified by the Department in writing, and must be resolved by the laboratory before further processing occurs.
- (4) The application will not be considered complete for further processing until the laboratory certifies in writing that the deficiencies have been resolved. The application will be considered withdrawn if the applicant fails to certify resolution within 90 days of postmark of notification by the Department.
- (5) When the application is approvable, the Department will inform the laboratory in writing and schedule an on-site laboratory inspection.

On-Site Laboratory Inspection and Stove Testing Proficiency Demonstration

340-34-100 [~~340-21-175~~]

- (1) An on-site inspection may be conducted by a Department representative after all laboratory information required by OAR 340-34-090 [~~OAR-340-21-165~~], has been provided by the laboratory, and reviewed and approved by the Department. The on-site visit may be conducted when a laboratory initially applies for accreditation or when the laboratory reapplies for a new certificate of accreditation.
- (2) During the on-site inspection, the Department representative will:
 - (a) Observe the Stove Testing Proficiency Demonstration specified in OAR 340-34-095; [~~OAR-340-21-170(3)~~]
 - (b) Meet with management and supervisory personnel responsible for the testing activities for which the laboratory is seeking accreditation;
 - (c) Review representative samples of laboratory records. To facilitate examination of personnel competency records, the laboratory should prepare a list of names of staff members who perform the tests;
 - (d) Observe test demonstrations and talk with laboratory personnel to assure their understanding of the test procedures. Refer to OAR 340-34-055 [~~OAR-340-21-120~~] and OAR 340-34-095; [~~340-21-170(3)~~]
 - (e) Physically examine selected equipment and apparatus;
 - (f) At the conclusion of the on-site visit, the Department may discuss observations with responsible members of the laboratory management pointing out any deficiencies uncovered.
- (3) In order to be accredited and as a part of each on-site laboratory inspection, each laboratory may be required to demonstrate to the Department's representative its ability to successfully and proficiently conduct and report a woodstove emission and efficiency test. Each laboratory may:
 - (a) Be required to test one woodstove provided by the Department. Costs for all stove shipping, catalytic combustors, or other necessary parts will be paid by the laboratory;
 - (b) Be required to test the stove in accordance with testing criteria and procedures specified in OAR 340-34-055; [~~OAR-340-21-120~~]

- (c) conduct the actual efficiency testing in the presence of a Department observer;
- (d) Submit all test data, observations and test results to the Department for technical evaluations.

Accreditation Application Deficiency, Notification and Resolution
340-34-105 [~~340-21-180~~]

- (1) Any deficiencies noted during the on-site inspection and/or in the test data and test results submitted from the stove testing proficiency demonstration will be specifically identified in writing and mailed to the laboratory within 30 days of the on-site visit.
- (2) The laboratory must respond in writing within 30 days of the date of postmark of the notification by the Department and provide documentation that the specified deficiencies have been corrected. All deficiencies must be corrected prior to accreditation being granted.
- (3) Deficiencies noted for corrective action will be subject to thorough review and verification during subsequent on-site visits and technical evaluations.
- (4) Any deficiencies in the test data and/or results may result in subsequent proficiency tests being required at the laboratory with a Department representative present.

Final Department Administrative Review and Certificate of Accreditation

340-34-110 [~~340-21-185~~]

- (1) When all application material has been received, including the on-site inspection and the stove testing proficiency evaluation, and there has been time for all deficiencies to be resolved, the Department will grant or deny accreditation.
- (2) Accreditation can be denied for failure to comply with or fulfill any of the criteria in OAR 340-34-090 [~~OAR-340-21-165~~], -095 [~~170~~], and -100 [~~175~~].
- (3) When accreditation is approved, a certificate of accreditation will be issued to the laboratory. Accreditation will be granted for a period of five years (60 months) subject to rule change or revocation for cause, pursuant to OAR 340, Division 11.
- (4) A certificate of accreditation is not renewable. A holder may obtain a new certificate of accreditation by completing the application procedure in OAR Chapter 340-34-095 [~~340-21-~~

~~170~~], and demonstrating compliance with OAR 340-34-090 [~~OAR 340-21-165~~] and OAR 340-34-100 [~~340-21-175~~].

- (5) The Department may select and audit test one stove tested by the laboratory during the accreditation period to verify certification test results. Any discrepancies noted will be communicated to the laboratory by certified or registered mail. The laboratory must respond in writing within 30 days of postmark of notification and provide documentation or certification by an authorized member of the laboratory management that the specified discrepancies have been corrected or the laboratory may be subject to civil penalties or revocation of accreditation.
- (6) A laboratory may voluntarily terminate its accreditation by written request at any time. The certificate of accreditation must be returned with the request.

Revocation, and Appeals

340-34-115 [~~340-21-190~~]

- (1) Violation of ~~[any of these rules]~~ OAR 340-34-050 through OAR 340-34-110 shall constitute cause to revoke the manufacturer's ~~[or dealer's]~~ woodstove certification or laboratory's certificate of laboratory accreditation. ~~[7-and also may be subject to civil penalties and other remedies pursuant to rule or statute.]~~
- (2) Certification of a woodstove may be revoked if the woodstove was tested at a laboratory that was found to be in violation of accreditation criteria and rules at the time the woodstove was tested for certification.
- (3) When certification or accreditation has been revoked, the holder shall return the certification or accreditation document to the Department and cease to use mention of Department certification or accreditation of the stove model or laboratory on any of its test reports, correspondence or advertising.
- (4) Stove certification and lab accreditation revocation shall be handled as contested cases pursuant to OAR Chapter 340, Division 11.

WOODBURNING CURTAILMENT

Applicability

340-34-150

OAR 340-34-150 through 340-34-175 shall apply to any portion of the state:

- (1) Where the Department has determined that, under the requirements of the Clean Air Act, an enforceable woodburning curtailment program is required as an emission reduction control strategy for a PM₁₀ nonattainment area and the Department has determined that the local government or regional authority has failed to adopt or adequately implement the required woodburning curtailment program. In determining whether a local government or regional authority has failed to adequately adopt or implement a curtailment program, the Department shall determine if a local government or regional authority:

 - (a) has adopted an ordinance that requires the curtailment of residential wood burning at forecasted air pollution levels which are consistent with the curtailment conditions and requirements specified in OAR 340-34-155(1) and 340-34-160(1) and (2);
 - (b) is issuing on a daily basis curtailment advisories to the public consistent with OAR 340-34-165; and
 - (c) is conducting surveillance for compliance and is taking adequate enforcement actions consistent with OAR 340-34-170.
- (2) Where the Department has determined that, under the requirements of the Clean Air Act, an enforceable woodburning curtailment program is required as an emission abatement strategy to respond to an air pollution emergency.
- (3) That is classified as a nonattainment area for PM₁₀ that does not achieve attainment by December 31, 1994, and which does not have an enforceable curtailment program that satisfies the criteria in sections (1)(a), (b) and (c) above.

Determination of Air Stagnation Conditions

340-34-155

The Department shall utilize appropriate data and technology to develop methodology criteria for a curtailment program that:

- (1) For use as an emission reduction control strategy or contingency plan for PM₁₀ nonattainment areas:
 - (a) Calls a Stage I advisory when the PM₁₀ standard is being approached; and
 - (b) Calls a Stage II advisory, when an exceedance of the PM₁₀ standard is forecasted to be imminent.
- (2) For use as an emission abatement strategy in order to respond to an air pollution emergency
 - (a) Calls an Alert when PM₁₀ alert levels have been reached and are forecasted to continued; and
 - (b) Calls a Warning when PM₁₀ warning levels have been reached and are forecasted to continue.
 - (c) Alert and Warning levels are specified in OAR Chapter 340, Division 27.

Prohibition on Woodburning During Periods of Air Stagnation.

340-34-160

- (1) During any designated Stage I Advisory, the operation of any uncertified woodstove, fireplace, or woodburning appliance shall be prohibited unless exempted under the provisions of OAR 340-34-015.
- (2) During any designated Stage II Advisory, the operation of any woodstove, fireplace, or woodburning appliance shall be prohibited unless exempted under the provisions of OAR 340-34-015.
- (3) During any designated PM₁₀ Alert, the operation of any uncertified woodstove, fireplace, or wood burning appliance shall be prohibited unless exempted under the provisions of OAR 340-34-015.
- (4) During any designated PM₁₀ Warning, the operation of any woodstove, fireplace, or woodburning appliance shall be prohibited unless exempted under the provisions of OAR 340-34-015.

Public Information Program

340-34-165

The Department or its designated representative shall implement a public information program to disseminate the daily air pollution advisory to the local community. The public information program shall include but may not be limited to the utilization of applicable local media including television, radio, and newspapers.

Enforcement

340-34-170

- (1) The Department or its designated representative shall monitor the level of compliance with curtailment requirements during designated periods of air stagnation.
- (2) A rebuttable presumption of a violation shall arise if smoke is being emitted through a flue or chimney during a curtailment period unless the household from which smoke is being emitted has provided the Department or designated representative with information indicating that the household or its woodburning appliance is exempt from curtailment requirements in accordance with OAR 340-34-015.
- (3) Any person claiming an exemption to OAR 340-34-150 through 340-34-175 in accordance with OAR 340-34-015 in response to a Notice of Noncompliance shall provide the Department with documentation which establishes eligibility for the exemption. The Department shall review the documentation and make a determination regarding the exemption status of the household, or woodheating appliance.

The following documentation shall be submitted to the Department for review in order to establish exemption status under the criteria of OAR 340-34-015:

- (a) For households desiring low income exemption status a copy of the previous year tax returns. The tax return should reflect the total combined household income for the past year;
- (b) A signed affidavit attesting to the sole source status of a home. See note;
- (c) A signed affidavit attesting to the certification status of the home heating appliance. See note.

Note: Affidavits for certified stove, low income, and sole source exemptions are available from the Woodheating Program, Air Quality Division, Department of Environmental Quality; 811 SW Sixth Avenue, Portland, Oregon 97204.

Suspension of Department Program

340-34-175

- (1) The Department shall suspend the operation and enforcement of OAR 340-34-150 through 340-34-170 in any area upon

determination by the Department that the local government or regional air quality authority has adopted and is adequately implementing a woodburning curtailment program that is at least as stringent as the program outlined in OAR 340-34-150 through 340-34-170.

- (2) In making a determination concerning the adequacy of a local or regional woodburning curtailment program, the Department shall consider whether or not the local government or regional authority has:
- (a) Adopted an ordinance that requires the curtailment of residential woodheating at forecasted air pollution levels which are consistent with curtailment conditions specified in OAR 340-34-155;
 - (b) Issues on a daily basis curtailment advisories to the public;
 - (c) Is conducting surveillance for compliance and is taking adequate enforcement actions;
 - (d) Any other information the Department determines is necessary to determine the adequacy of the curtailment program.

Woodstove Removal Contingency Program for PM₁₀ Nonattainment Areas

Applicability

340-34-200

OAR 340-34-205 through 340-34-215 shall apply to any area classified as a nonattainment area for PM₁₀ that does not achieve attainment by December 31, 1994.

Removal and Destruction of Uncertified Stove Upon Sale of Home.

340-34-205

Except as provided for by OAR 340-34-015, any uncertified woodstove shall be removed and destroyed by the seller upon the sale of a home.

Home Seller's Responsibility to Verify Stove Destruction

340-34-210

Any person selling a home which contains an uncertified woodstove shall provide to the Department prior to the sale of the home, a copy of a receipt from a scrap metal dealer verifying that the stove has been destroyed.

Home Seller's Responsibility to Disclose

340-34-215

Any person selling a home in which an uncertified woodstove is present shall disclose to any potential buyer, buyers agent or buyers representative that the woodstove is uncertified, and must be removed and destroyed upon sale of the home.

DLC:YM
RPT\AH15031
(8/14/91)

**RULEMAKING STATEMENT FOR PROPOSED NEW RESIDENTIAL WOODHEATING
RULES AND CONTINGENCY MEASURES**

STATEMENT OF NEED FOR RULEMAKING

Pursuant to ORS 183.335(7), this statement provides information on the intended action to adopt new rules.

(1) Legal Authority

This proposal adds new Division 34, Residential Woodheating, to Oregon Administrative Rules (OAR) Chapter 340. It is proposed under authority of Oregon Revised Statutes (ORS) Chapter 468.

(2) Need for these Rules

The federal Clean Air Act Amendments of 1990 require that States adopt State Implementation Plan (SIP) revisions to assure that areas which violate the PM₁₀ health and welfare standards are brought into attainment with those standards within prescribed time frames. The revisions must be submitted to the United States Environmental Protection Agency (EPA) by November 15, 1991 or the state will face serious federal sanctions. The SIP must be based on a foundation of rules that implement all requirements of the Clean Air Act and are approved by EPA as federally enforceable. The new and revised rules in this proposal are required to ensure that the PM₁₀ SIP revisions are approvable by EPA.

These rules establish control measures and contingency control requirements for residential woodheating in PM₁₀ nonattainment areas, and under certain circumstances for any area of the state. The Clean Air Act requires that the SIP revisions include reasonably available control measures and contingency measures which go into effect without further action by the state if an area fails to meet the attainment date.

(3) Principal Documents Relied Upon

Federal Clean Air Act Amendments of 1990, PL 101-549, November 15, 1990.

HB2175 Sections 10 through 11.

All documents referenced may be inspected at the Department of Environmental Quality, Air Quality Division, 811 S.W. 6th Avenue, Portland, Oregon, during normal business hours.

LAND USE CONSISTENCY STATEMENT

The proposed rule changes appear to affect land use as defined in the Department's coordination program with the Department of Land Conservation and Development (DLCD), but appear to be consistent with the Statewide Planning Goals.

With regard to Goal 6, (air, water, and land resources quality), the proposed changes are designed to enhance and preserve air quality in the State and are considered consistent with the Goal. The proposed rule changes do not appear to conflict with the other Goals.

Public comment on any land use issue involved is welcome and may be submitted in the same fashion as indicated for other testimony on these rules.

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 DLCD to mediate any appropriate conflicts brought to our attention by local, state, or federal authorities.

DLC:YM
RPT\AH15032
(8/14/91)

FISCAL AND ECONOMIC IMPACT STATEMENT

Division 34 has been created and organized to list all rules pertaining to residential woodburning. Below are the anticipated fiscal and economic impacts of the new rules added under Division 34, with the exception of the pre-existing woodstove certification rules. These new rules and their provisions have been explicitly authorized by HB2175 passed by the 1991 Oregon legislature.

1. PROHIBITION ON THE SALE OF USED, NONCERTIFIED WOODSTOVES

The fiscal and economic impact of the used woodstove ban will effect woodstove retailers as well as individual woodstove owners. The prohibition on the sale of used, noncertified woodstoves within the State of Oregon is anticipated to produce the following fiscal and economic impacts:

I. General Public

Owners of used, noncertified woodstoves may be adversely affected by the loss in resale value of their used, noncertified stoves. If an owner attempts to sell their stove before it wears out the loss in value would typically fall within a range of \$50-\$200. An owner may be able to realize some minor value, approximately \$5 to \$10 by selling it to a scrap metal dealer; however, the cost of transportation could negate any value as scrap. Although under this rule the sale of used, noncertified stoves is prohibited in Oregon, advertizement and sale is possible out of state.

II. Small Business

The prohibition on the sale of used, noncertified stoves will be an economic benefit to the woodstove retail industry in Oregon. Woodstove retailers would still be allowed to offer full trade-in value for a used, noncertified stove. Retailers could also benefit by stock piling used stoves and then shipping them out of state for resale. With used, noncertified stove sales prohibited, retailers should also see an increase in the sale of new certified stoves which range in cost from approximately \$700 to \$1,700.

Small businesses that refurbish used stoves for resale would see a significant loss in business due to this rule. Dealers that specialize in antique woodstoves are exempt and would not be impacted.

IV. Large Business

A survey of local woodstove retailers shows no identifiable fiscal or economic impact on large business. No large chain stores were identified as selling used, noncertified stoves.

V. Local Governments

The prohibition on the sale of used, noncertified stoves is not anticipated to have any fiscal or economic impact on local government.

VI. State Agencies

Surveillance and enforcement of the used stove ban will be integrated into the Department's existing woodstove certification program, and will be implemented using existing staff resources.

2. STATE ENFORCEMENT OF RESIDENTIAL WOODHEATING CURTAILMENT

The fiscal and economic impact of a state mandatory curtailment program will vary for each area of the state depending upon several specific local parameters. Variations in local conditions such as meteorology, terrain, and woodstove population directly affect the number of curtailment days required. For example Grants Pass has historically required 3-5 days of curtailment per heating season, Medford 20 days, while Klamath Falls may have up to 47 days.

The annual cost to an individual home owner, as well as to the community of cooperating with a curtailment program must take into account the extra cost to operate an alternative heat source per curtailment day, and the number of curtailment days per year.

I. General Public

The economic impact of a state mandatory curtailment program on the general woodstove user will also vary depending on the type of alternate heat source available, weatherization and the size of each home. Curtailing woodstove burning and substituting with natural gas, oil, or a heat pump during curtailment days could cost a homeowner on average \$1.30 extra per day of curtailment.

Electric heating is the most expensive means of back up heat. The cost to supplant woodstove burning with electric heat could average about \$3.90 per day of curtailment. The actual cost per day to comply with a curtailment program may fluctuate with any future changes in local or regional utility rates. Sole source and certified woodstove exemptions are available to qualifying households, as well as an exemption for pelletstoves.

Below is an estimation of daily and seasonal costs for a homeowner to comply with curtailment by substituting an alternative heating source for woodheat during curtailment days. This estimate is based on the average level of home weatherization, and typical home heat demand found in Oregon. It also assumes a moderate case of 20 days of curtailment during the heating season:

	<u>Cost/day</u>	<u>Extra \$ /day</u>	<u>Seasonal Cost To Curtail</u>
Woodheat	\$2.35	NA	NA
Gas/Oil/HP.	\$3.65	\$1.30	\$26.00/season/home
Elec.	\$6.25	\$3.90	\$78.00/season/home

Enforcement of the State curtailment program may result in an adverse economic impact to homeowners who violate the restrictions. While typically first time violators are given warning citations, subsequent violations can carry civil penalties of up to \$250 or more.

II. Small Business

Influenced by the demands of a woodburning curtailment program, some woodstove users may choose to upgrade their woodheating systems to either a non-wood alternative, or a woodburning appliance that is exempt from the curtailment requirements. Under this scenario woodstove retailers, and retailers for gas, oil, or electric heating systems could see an increase in sales.

III. Large Business

Electric utilities, natural gas and oil suppliers would see an increase in sales demand during curtailment days as woodburning households switch to non-wood alternatives.

IV. Local Governments

The State woodheating curtailment rule makes provision for the State to relinquish its program to local government provided that government has adopted and is adequately implementing a program that it is at least as stringent as that implemented by the State. If a local government or regional authority were to adopt and solely implement a local woodheating curtailment program the economic impact could be significant.

In operating a curtailment program a local government or regional air pollution authority would need to commit staff resources, and other funding to conduct the daily pollution advisory, as well as conduct monitoring and compliance surveys, public relations activities, develop educational materials, and effectively enforce the program.

The cost to develop and implement an adequate program may include expenses in the areas of personal services, supplies, capitol outlay, and indirect costs. Historically the cost to local government of implementing a woodburning curtailment program has ranged from approximately \$12,000 to over \$175,000.

Special funding is sought from the Environmental Protection Agency to cover some of the program costs. EPA funding is usually

channeled through the Department to the local government to provide the appropriate assistance.

V. State Agencies

If a local government fails to adopt or adequately implement the required local ordinance the Department estimates that one Environmental Specialist 3 at .5 FTE per biennium would be needed to implement the state curtailment program. EPA funding assistance would be requested to provide the additional resources needed by the Department.

3. REQUIREMENT FOR THE REMOVAL AND DESTRUCTION OF USED, NONCERTIFIED WOODSTOVES UPON SALE OF A HOME IN A PM₁₀ NONATTAINMENT AREA AFTER DECEMBER 31, 1994.

If a PM₁₀ nonattainment area fails to attain compliance with the standard by December 31, 1994 this contingency strategy will require that all used, noncertified woodstoves, unless exempted, be removed and destroyed upon sale of a home.

I. General Public

An adverse economic impact to a home seller will be reflected by a loss in the value of the stove due to the prohibition on the resale of used, noncertified stoves. This loss in value will typically range between \$50 to \$200. Stove removal costs and the cost of home repairs after stove removal will also impact the seller.

The cost to repair a home after stove removal may range from less than \$100 to over several hundred dollars depending upon the level of restoration needed. If the stove is removed and replaced with a new certified stove the cost to reinstall should be minimal, but with the cost of a new certified stove ranging from approximately \$700 to \$1,700, and pelletstoves typically ranging from \$1,200 to \$2,200.

Since woodstoves are typically considered a fixture there may be a minor decrease in the value of the home when the stove is removed. If the home owner replaces the used stove with a new certified stove the value of the home should be improved. If the used stove was the sole source of heat for the home the owner would then have to install a new heating system, costing at a minimum several hundred dollars and potentially several thousand dollars.

AVERAGE COST OF COMPLIANCE

Considering the variety of options available to the homeowner regarding choice of heating system replacement, installation and repair costs there may be no typical cost of compliance with this rule. However, taking into account the average costs of replacing an old stove with a new certified stove and upgrading

the installation to code the average cost of compliance with this rule would be approximately \$1,150.

II. Small Business

Woodstove retailers may benefit due to the potential increased sales of new certified woodstoves. Retailers of alternative heating systems may also benefit due to increased sales. Stove installers, and residential contractors may benefit when a stove is removed and replaced with a new stove, or the old installation is repaired.

III. Large Business

Utility companies would see an economic benefit as some woodburning households replace their woodstove with a non-wood alternative heating system.

IV. Local Governments

The economic impact of local government should be negligible.

V. State Agencies

Between now and December 1994, the Department would pursue the development of an advisory committee with the goal to outline the most efficient means to ensure that the stove removal and destruction requirement is carried out with the least expenditure of Department resources, but the highest compliance level. The Department's existing woodheating program staff should be able to handle the enforcement work for this measure. If necessary, EPA funding will be requested to provide additional staffing.

DLC:YM
RPT\AH15033
(8/14/91)

NOTICE OF PUBLIC HEARING

Hearing Dates: September 26,
27, 30 & October
1, 1991

Comments Due: October 2, 1991

WHO IS AFFECTED:

Individuals, especially those with woodstoves, and board product industries statewide, local governments, agricultural operations and industries in or near the Medford-Ashland, Klamath Falls, Grants Pass and La Grande PM₁₀ Nonattainment Areas.

WHAT IS PROPOSED:

The Department of Environmental Quality is proposing to amend OAR 340-20-047, the State of Oregon Clean Air Act Implementation Plan to:

- o Revise fine particulate (PM₁₀) Pollution Control Strategies for the Medford, Grants Pass and Klamath Falls areas;
- o Add a new PM₁₀ Control Strategy for the La Grande area;
- o Add new regulations for woodstoves, OAR Chapter 340, Division 34;
- o Add new contingency industrial particulate emission standards for PM₁₀ nonattainment areas, OAR Chapter 340, Division 21;
- o Revise the Medford/Grants Pass Particulate Standard Rules, OAR Chapter 340, Division 30;
- o Revise Board Products Particulate Emission Standard Rules, OAR Chapter 340, Division 25;
- o Revise Ambient Air Standard Rules, OAR Chapter 340, Division 31;
- o Revise Rogue Basin Open Burning Control Area rules, OAR Chapter 340, Division 23.

WHAT ARE THE HIGHLIGHTS:

The federal Clean Air Act requires states to submit PM₁₀ attainment Control Strategies for PM₁₀ Nonattainment Areas to the U.S. Environmental Protection Agency (EPA) by November 15, 1991. The Control Strategies specify how federal PM₁₀ air quality standards will be attained by the Act's deadline of December 31, 1994. They primarily rely on controlling PM₁₀ emissions from residential woodheating, industry and open burning.

ATTACHMENT D

The proposed rules which would implement PM₁₀ Control Strategies will:

- o Regulate residential woodheating according to new legislative authority including:
 - > Banning the sale of used, uncertified woodstoves statewide;
 - > allowing DEQ to prohibit woodheating on poor air quality days if local governments fail to adopt or implement such programs where needed;
 - > Requiring the destruction of uncertified woodstoves upon the sale of a home as a contingency measure if an area fails to attain compliance with the PM₁₀ standard by December 31, 1994.
- o Require industries in PM₁₀ nonattainment areas to meet Reasonably Available and Best Available Control Technology requirements of the Clean Air Act as a contingency measure if areas fail to attain compliance with the PM₁₀ standard by the Clean Air Act deadline.
- o Require tighter meteorological criteria for allowing open burning in the Rogue Basin Open Burning Control Area, and ban open burning from November through February in this area as a contingency if it fails to attain compliance with the PM₁₀ standard by the Clean Air Act deadline.
- o Address housekeeping/enforceability issues raised by EPA with respect to existing state regulations covering the Board Products Industry, Medford/Grants Pass Industrial Particulate Emission and Ambient Air Standards.

HOW TO COMMENT:

Copies of the complete proposed rule packages may be obtained from the Air Quality Division at 811 S.W. Sixth Avenue, Portland, OR 97204, or the regional office nearest you. For further information, call toll free 1-800-452-4011 (in Oregon), or contact:

Merlyn Hough at (503) 229-6446 (Medford-Ashland)
John Core at (503) 229-5380 (Klamath Falls)
Howard Harris at (503) 229-6086 (Grants Pass)
Brian Finneran at (503) 229-6278 (La Grande)
Andy Ginsburg at (503) 229-5581 (Industry)
David Collier at (503) 229-5177 (Woodstoves)

Public hearings will be held before a hearings officer at:

7:00 pm
September 26, 1991
Commission Hearing Room
Courthouse Annex
Klamath Falls, Oregon

7:00 pm
September 30, 1991
Smullin Center Auditorium
Rogue Valley Medical Ctr.
Medford, Oregon

7:00 pm
September 27, 1991
City Council Chambers
101 NW "A" Street
Grants Pass, Oregon

7:00 pm
October 1, 1991
City Hall
1000 Adams Avenue
La Grande, Oregon

3:00 pm
October 1, 1991
DEQ Offices
811 SW Sixth Avenue
Portland, Oregon

Oral and written comments will be accepted at the public hearings. Written comments may be sent to the DEQ, but must be received no later than 5 pm, October 2, 1991.

WHAT IS THE NEXT STEP:

After public hearings, the Environmental Quality Commission may adopt rule amendments and Control Strategies identical to the proposed amendments, adopt modified rule amendments and Control Strategies on the same subject matter, or decline to act. The adopted rules and Control Strategies will be submitted to the EPA as part of the State Clean Air Act Implementation Plan. The Commission's deliberation should come on November 7, 1991, 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.

YM:a
RPT\AH15041
(8/14/91)

C-Eng. HB 2175

1 ~~of Environmental Quality an emission fee for each cord supplied on and after July 1, 1998, for~~
 2 ~~emission resulting from the burning of the cordwood. The emission fee required by this section shall~~
 3 ~~be \$3 per cord supplied and shall be remitted to the department in accordance with a payment~~
 4 ~~schedule established by the Environmental Quality Commission.~~
 5 ~~(2) The fee required under subsection (1) of this section shall not apply to cordwood supplied:~~
 6 ~~(a) From private land for the personal use of the landowner;~~
 7 ~~(b) From private land where permits, registrations, charges or other administrative procedures~~
 8 ~~are not required for a person other than the landowner to remove the cordwood;~~
 9 ~~(c) For export from the state; and~~
 10 ~~(d) To persons who present certificates of exemption issued under subsection (4) of this section.~~
 11 ~~(3) A federal land manager that provides cordwood shall administer a program to collect the~~
 12 ~~cordwood fee imposed under subsection (1) of this section from persons who remove cordwood from~~
 13 ~~federal land and, upon approval of such program by the department, shall be exempt from the fee~~
 14 ~~required under subsection (1) of this section. Any person who removes cordwood from federal land~~
 15 ~~subject to a program approved under this subsection shall pay to the administering federal land~~
 16 ~~manager the emission fee imposed under subsection (1) of this section. The administering federal~~
 17 ~~land manager shall forward the fees received to the department in accordance with the terms of the~~
 18 ~~program approved under this subsection. The program may provide for the reimbursement of rea-~~
 19 ~~sonable fee collection costs, but such reimbursement shall not exceed the amount allowed under~~
 20 ~~section 10 of this 1991 Act.~~
 21 ~~(4) Any person who destroys or has destroyed a woodstove that was not certified under ORS~~
 22 ~~468.655 for sale as new on or after July 1, 1986, shall receive a certificate to exempt four cords of~~
 23 ~~wood from the fee imposed under this section. A cordwood supplier shall accept such certificate and~~
 24 ~~credit the certificate holder.~~
 25 ~~(5) The commission shall adopt rules to implement this section. The rules shall include but need~~
 26 ~~not be limited to fee payment due dates, requirements for fee collection programs established under~~
 27 ~~subsection (3) of this section and requirements for exemptions provided under subsections (2) and (4)~~
 28 ~~of this section.~~
 29 ~~(6) All fees collected under this section shall be deposited in the State Treasury to the credit~~
 30 ~~of the Residential Wood Heating Air Quality Improvement Fund created under section 10 of this~~
 31 ~~1991 Act.~~
 32 ~~(7) As used in this section, "cordwood" means any split or unsplit logs or branches of any~~
 33 ~~length, other than artificially compressed logs or pelletized fuel, that are to be used, sold or resold~~
 34 ~~as fuel for residential space heating.~~

34a "NOTE: Section 9 was deleted by amendment. Subsequent sections were
 34b not renumbered."

34c Delete lines 37 and 38 and insert:

34d "(2) All moneys appropriated or received as gifts or grants for the pur-
 34e poses of this section shall be credited to the Residential Wood Heating Air
 34f Quality Improvement Fund."

35 SECTION 10. (1) There is created within the State Treasury a fund known as the Residential
 36 Wood Heating Air Quality Improvement Fund, separate and distinct from the General Fund.

37 (2) All moneys received as fees under section 9 of this 1991 Act shall be credited to the Resi-
 38 dential Wood Heating Air Quality Improvement Fund.

39 (3) The State Treasurer may invest and reinvest the moneys in the fund as provided in ORS
 40 293.701 to 293.776. Interest from the moneys deposited in the fund and earnings from investment of
 41 the moneys in the fund shall accrue to the fund.

42 (4) All moneys in the Residential Wood Heating Air Quality Improvement Fund are continuously
 43 appropriated to the Department of Environmental Quality to:

44 ~~(a) Pay all costs incurred by the Department of Environmental Quality and other entities to~~

1 ~~collect the emission fee imposed under section 9 of this 1991 Act~~

2 (a) ~~(b)~~ Pay all costs incurred by the department in maintaining residential wood heating emissions
3 inventories, analyzing projects and programs proposed for funding in accordance with this section.
4 administering projects and programs selected for funding in accordance with this section and im-
5 plementing the requirements of ORS 468.650 (2) and 468.655 (1)(g).

6 (b) ~~(c)~~ Pay all reasonable costs as determined by the Environmental Quality Commission for local
7 government and regional authority public education, emission inventory maintenance, curtailment
8 and opacity programs to reduce residential wood heating emission in an area that exceeds the PM10
9 standard or an area that is at risk of becoming an area that exceeds the PM10 standard. *and (d)*

10 (c) ~~(d)~~ To the extent moneys remain in the fund after paying the costs under paragraphs (a) ~~(b) to (c)~~
11 of this subsection, to fund programs established under subsections (5) and (6) of this section in a
12 manner designed to achieve cost-beneficial reductions in emission of air contaminants from
13 woodstoves, attain federal ambient air quality standards before deadlines specified in the Clean Air
14 Act and maintain compliance with such standards after the deadlines established in the Clean Air
15 Act.

16 (d) ~~(e)~~ Not more than 15 percent of the total amount of moneys received *under this section* ~~(as fees under section 9 of~~
17 ~~this 1991 Act)~~ shall be expended for costs under paragraphs (a) ~~(b) to (c)~~ of this subsection.

18 (b) A portion of the moneys available under subsection (4) of this section shall be used by the
19 Environmental Quality Commission to fund a low or no interest loan program for wood heated
20 households located in the western interior valleys or in any other county containing an area that
21 exceeds the PM10 standard to replace woodstoves that were not certified under ORS 468.655 for sale
22 as new on or after July 1, 1986. The program shall include the following elements:

23 (a) All forms of new high-efficiency, low air contaminant-emitting heating systems are allowed;

24 (b) Any removed woodstove must be destroyed;

25 (c) Any replacement woodstoves selected under the program must be installed in conformance
26 with building code requirements and the manufacturer's specifications including but not limited to
27 chimney specifications; and

28 (d) To be eligible, program participants shall participate in any home energy audit program
29 provided at no charge to the homeowner and shall obtain all information available regarding subsi-
30 dies for cost-effective weatherization. The department shall make the information required in this
31 subsection readily available to program participants.

32 (6) A portion of the moneys available under subsection (4) of this section shall be used by the
33 commission to fund local government or regional authority programs to provide subsidies for re-
34 placement of woodstoves that were not certified under ORS 468.655 for sale as new on or after July
35 1, 1986, to low income persons in wood heated households in an area that exceeds the PM10 stand-
36 ard. The local government or regional authority programs must include the following elements to
37 be eligible for funding:

38 (a) All forms of new high-efficiency low emitting heating systems are allowed.

39 (b) All woodstoves removed are destroyed.

40 (c) The local government or regional authority adopts and enforces an ordinance that limits
41 emissions from woodstoves to no visible smoke, except for steam and heat waves, during periods of
42 air stagnation and to an average of 20 percent opacity at all other times except during start up and
43 refueling as determined by the commission. This requirement shall not be in lieu of any final stage-
44 of woodstove curtailment required during air stagnation if the final stage of curtailment is necessary

1 to prevent exceeding air quality standards established under ORS 468.295 by the latest date allowed
2 under the Clean Air Act to reach attainment of such standards.

3 (d) In an airshed requiring more than a 50 percent reduction in woodheating emissions as
4 specified in the State Implementation Plan control strategy for PM10 emissions, program partic-
5 ipants shall have a backup heat source if a certified woodstove is selected.

6 (e) Any replacement woodstove selected under the program must be installed in conformance
7 with building code requirements and the manufacturer's specifications including but not limited to
8 chimney specifications.

9 (f) To be eligible, program participants shall participate in any home energy audit program
10 provided at no charge to the homeowner and shall obtain all information available regarding subsi-
11 dies for cost-effective weatherization. The local government or regional air quality authority shall
12 make the information required in this subsection readily available to program participants.

13 **SECTION 10a.** On and after the effective date of this 1991 Act, the state building code under
14 ORS 455.010 shall prohibit installations of used woodstoves that were not certified for sale as new
15 on or after July 1, 1986, under ORS 468.655 (1).

16 **SECTION 10b.** On and after the effective date of this 1991 Act, no person shall advertise for
17 sale, offer to sell or sell, within this state, a used woodstove that was not certified under ORS
18 468.655 (1) for sale as new on or after July 1, 1986.

19 **SECTION 10c.** After December 31, 1994, all woodstoves, other than cookstoves, not certified for
20 sale as new on or after July 1, 1986, under ORS 468.655 (1) shall be removed and destroyed upon
21 sale of a home in any PM10 nonattainment area in the state that does not attain compliance with
22 the PM10 standard established by the commission under ORS 468.295 by December 31, 1994.

23 **SECTION 10d.** Sections 10a to 10c of this 1991 Act shall not apply to antique woodstoves. As
24 used in this section, "antique woodstove" means a woodstove built before 1940 that has an ornate
25 construction and a current market value substantially higher than a common woodstove manufac-
26 tured in the same time period.

27 **SECTION 11.** (1) Any programs adopted by the commission to curtail residential wood heating
28 during periods of air stagnation shall provide for two stages of curtailment based on the severity
29 of projected air quality conditions. Except as provided in subsection (2) of this section, the programs
30 shall apply to all woodburning fireplaces, woodstoves and appliances. The programs shall provide
31 that woodstoves that were certified for sale as new on or after July 1, 1986, under ORS 468.655 (1)
32 shall be curtailed only at the second stage to insure attainment of air quality standards.

33 (2) Programs adopted by the commission to curtail residential wood heating shall not apply to:

34 (a) A person who is classified at less than or equal to 125 percent of poverty level pursuant to
35 federal poverty income guidelines adopted under the Omnibus Budget Reconciliation Act of 1981
36 (P.L. 97-35);

37 (b) A person whose residence is equipped only with wood heating until such time as funding
38 becomes available for replacement or woodstoves that were not certified under ORS 468.655 for sale
39 as new on or after July 1, 1986, and for the period of time between application for such funds and
40 completion of the replacement; and

41 (c) Wood burning pellet stoves.

42 (3) If a local government or regional authority has not adopted or is not adequately implement-
43 ing the required curtailment program, the Environmental Quality Commission may adopt by rule and
44 the Department of Environmental Quality may operate and enforce a program to curtail residential

1 wood heating during periods of air stagnation as specified in subsection (1) of this section in any
2 area of the state where such a program is required under the Clean Air Act. The department shall
3 suspend operation and enforcement of a program adopted under this subsection upon a determi-
4 nation by the department that the local government or regional air quality authority has adopted
5 and is adequately implementing the required curtailment program.

6 (4) Except as provided in this section, after the effective date of this 1991 Act, the commission
7 shall not adopt or make more stringent any additional regulatory programs affecting residential
8 wood heating unless the air quality standard for PM10 established by the commission under ORS
9 468.295 has not been attained in the state by the latest date, considering extensions, allowed under
10 the Clean Air Act. Nothing in this section shall be construed to affect regulatory programs in effect
11 on the effective date of this 1991 Act.

12 **SECTION 12.** (1) Because of the extraordinary effect that the federal operating permit program
13 may have on small business, there is hereby established within the department a Small Business
14 Stationary Source Technical and Environmental Compliance Assistance Program in accordance with
15 section 507 of the Clean Air Act. This program shall include each element specified in section 507(a)
16 of the Clean Air Act.

17 (2) A Compliance Advisory Panel is established to:

18 (a) Advise the department on the effectiveness of the Small Business Stationary Source Techni-
19 cal and Environmental Compliance Assistance Program;

20 (b) Report to the administrator as required by federal law;

21 (c) Review the information to be issued by the program for small businesses to assure the in-
22 formation is understandable by a layperson; and

23 (d) Perform any other function required by the Clean Air Act.

24 (3) The Compliance Advisory Panel shall consist of not less than seven members:

25 (a) Two members appointed by the Governor, who are not owners, or representatives of owners,
26 of small business stationary sources, to represent the general public;

27 (b) Four members who are owners, or who represent owners, of small business stationary
28 sources as follows:

29 (A) One member appointed by the President of the Senate;

30 (B) One member appointed by the Speaker of the House;

31 (C) One member appointed by the Senate Minority Leader; and

32 (D) One member appointed by the House Minority Leader; and

33 (c) One member appointed by the director of the department.

34 (4)(a) Onsite technical assistance for the development and implementation of the Small Business
35 Stationary Source Technical and Environmental Compliance Assistance Program shall not result in
36 inspections or enforcement actions, except that the department may initiate compliance and
37 enforcement actions immediately if, during on-site technical assistance, there is reasonable cause to
38 believe a clear and immediate danger to the public health and safety or to the environment exists.

39 (b) As used in this subsection:

40 (A) "Clear" means plain, evident, free from doubt.

41 (B) "Immediate danger" means a situation in which there is substantial likelihood that serious
42 harm may be experienced within the time frame necessary for the department to pursue an
43 enforcement action.

44 **SECTION 13.** The Legislative Assembly finds that extending additional statewide controls and

GENERAL ADMINISTRATION

468.005 Definitions. As used in ORS 448.305, 454.010 to 454.040, 454.205 to 454.255, 454.405, 454.425, 454.505 to 454.535, 454.605 to 454.745 and this chapter, unless the context requires otherwise:

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

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

(3) "Director" means the Director of the Department of Environmental Quality.

(4) "Order" has the same meaning as given in ORS 183.310.

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

(6) "Rule" has the same meaning as given in ORS 183.310.

(7) "Standard" or "standards" means such measure of quality or purity for air or for any waters in relation to their reasonable or necessary use as may be established by the commission pursuant to ORS 448.305, 454.010 to 454.040, 454.205 to 454.255, 454.405, 454.425, 454.505 to 454.535, 454.605 to 454.745 and this chapter. [Formerly 449.001]

468.010 Environmental Quality Commission; appointment; confirmation; term; compensation and expenses. (1) There is created an Environmental Quality Commission. The commission shall consist of five members, appointed by the Governor, subject to confirmation by the Senate as provided in ORS 171.562 and 171.565.

(2) The term of office of a member shall be four years, but the members of the commission may be removed by the Governor. Before the expiration of the term of a member, the Governor shall appoint a successor to assume the duties of the member on July 1 next following. A member shall be eligible for reappointment, but no member shall serve more than two consecutive terms. In case of a vacancy for any cause, the Governor shall make an appointment to become immediately effective for the unexpired term.

(3) A member of the commission is entitled to compensation and expenses as provided in ORS 292.195. [Formerly 449.016]

468.015 Functions of commission. It is the function of the commission to establish the policies for the operation of the department in a manner consistent with the policies and purposes of ORS 448.305, 454.010 to 454.040, 454.205 to 454.255, 454.405, 454.425, 454.505 to 454.535, 454.605 to 454.745 and this

chapter. In addition, the commission shall perform any other duty vested in it by law. [1973 c 835 §4]

468.020 Rules and standards. (1) In accordance with the applicable provisions of ORS 183.310 to 183.550, the commission shall adopt such rules and standards as it considers necessary and proper in performing the functions vested by law in the commission.

(2) Except as provided in ORS 183.335 (5), the commission shall cause a public hearing to be held on any proposed rule or standard prior to its adoption. The hearing may be before the commission, any designated member thereof or any person designated by and acting for the commission. [Formerly 449.173; 1977 c 38 §1]

468.030 Department of Environmental Quality. There is hereby established in the executive-administrative branch of the government of the state under the Environmental Quality Commission a department to be known as the Department of Environmental Quality. The department shall consist of the director of the department and all personnel employed in the department. [Formerly 449.032]

468.035 Functions of department. (1) Subject to policy direction by the commission, the department:

(a) Shall encourage voluntary cooperation by the people, municipalities, counties, industries, agriculture, and other pursuits, in restoring and preserving the quality and purity of the air and the waters of the state in accordance with rules and standards established by the commission.

(b) May conduct and prepare, independently or in cooperation with others, studies, investigations, research and programs pertaining to the quality and purity of the air or the waters of the state and to the treatment and disposal of wastes.

(c) Shall advise, consult, and cooperate with other agencies of the state, political subdivisions, other states or the Federal Government, in respect to any proceedings and all matters pertaining to control of air or water pollution or for the formation and submission to the legislature of interstate pollution control compacts or agreements.

(d) May employ personnel, including specialists, consultants and hearing officers, purchase materials and supplies, and enter into contracts necessary to carry out the purposes set forth in ORS 448.305, 454.010 to 454.040, 454.205 to 454.255, 454.405, 454.425, 454.505 to 454.535, 454.605 to 454.745 and this chapter.

(e) Shall conduct and supervise programs of air and water pollution control education, including the preparation and distribution of

(2) in determining air purity standards, the commission shall consider the following factors:

(a) The quality or characteristics of air contaminants or the duration of their presence in the atmosphere which may cause air pollution in the particular area of the state;

(b) Existing physical conditions and topography;

(c) Prevailing wind directions and velocities;

(d) Temperatures and temperature inversion periods, humidity, and other atmospheric conditions;

(e) Possible chemical reactions between air contaminants or between such air contaminants and air gases, moisture or sunlight;

(f) The predominant character of development of the area of the state, such as residential, highly developed industrial area, commercial or other characteristics;

(g) Availability of air-cleaning devices;

(h) Economic feasibility of air-cleaning devices;

(i) Effect on normal human health of particular air contaminants;

(j) Effect on efficiency of industrial operation resulting from use of air-cleaning devices;

(k) Extent of danger to property in the area reasonably to be expected from any particular air contaminants;

(L) Interference with reasonable enjoyment of life by persons in the area which can reasonably be expected to be affected by the air contaminants;

(m) The volume of air contaminants emitted from a particular class of air contamination source;

(n) The economic and industrial development of the state and continuance of public enjoyment of the state's natural resources; and

(o) Other factors which the commission may find applicable.

(3) The commission may establish air quality standards including emission standards for the entire state or an area of the state. The standards shall set forth the maximum amount of air pollution permissible in various categories of air contaminants and may differentiate between different areas of the state, different air contaminants and different air contamination sources or classes thereof. [Formerly 449.785]

468.300 When liability for violation not applicable. The several liabilities which may be imposed pursuant to ORS 448.305, 454.010

to 454.040, 454.205 to 454.255, 454.405, 454.425, 454.505 to 454.535, 454.605 to 454.745 and this chapter upon persons violating the provisions of any rule, standard or order of the commission pertaining to air pollution shall not be so construed as to include any violation which was caused by an act of God, war, strife, riot or other condition as to which any negligence or wilful misconduct on the part of such person was not the proximate cause. [Formerly 449.825]

468.305 General comprehensive plan. Subject to policy direction by the commission, the department shall prepare and develop a general comprehensive plan for the control or abatement of existing air pollution and for the control or prevention of new air pollution in any area of the state in which air pollution is found already existing or in danger of existing. The plan shall recognize varying requirements for different areas of the state. [Formerly 449.782]

468.310 Permits. By rule the commission may require permits for air contamination sources classified by type of air contaminants, by type of air contamination source or by area of the state. The permits shall be issued as provided in ORS 468.065. [Formerly 449.727]

468.315 Activities prohibited without permit; limit on activities with permit. (1) Without first obtaining a permit pursuant to ORS 468.065, no person shall:

(a) Discharge, emit or allow to be discharged or emitted any air contaminant for which a permit is required under ORS 468.310 into the outdoor atmosphere from any air contamination source.

(b) Construct, install, establish, develop, modify, enlarge or operate any air contamination source for which a permit is required under ORS 468.310.

(2) No person shall increase in volume or strength discharges or emissions from any air contamination source for which a permit is required under ORS 468.310 in excess of the permissive discharges or emission specified under an existing permit. [Formerly 449.731]

468.320 Classification of air contamination sources; registration and reporting of sources. (1) By rule the commission may classify air contamination sources according to levels and types of emissions and other characteristics which cause or tend to cause or contribute to air pollution and may require registration or reporting or both for any such class or classes.

(2) Any person in control of an air contamination source of any class for which registration and reporting is required under subsection (1) of this section shall register