

SECTION 6

SELECTED CONTROL MEASURES & FEDERAL PM-10 STANDARD ATTAINMENT DEMONSTRATION

6.0 SELECTED CONTROL MEASURES & FEDERAL PM-10 STANDARD ATTAINMENT DEMONSTRATION

The final control strategy was adopted by the Mammoth Lakes Town Council on November 7, 1990. The strategy was added to the Town of Mammoth Lakes Municipal Code as Chapter 8.30, Particulate Emissions Regulations. The regulations will reduce emissions from reentrained road cinders, will phase out non-certified wood burning appliances and will institute wood burning curtailments during periods of high PM-10 concentrations. The regulations include several contingency measures that will enable the Town to meet the Federal 24-hour PM-10 Standard within 3 to 5 years. A summary of the adopted regulations is listed in Table 6.1.

The regulations' primary measures will result in the eventual phasing out of all non-certified wood stoves and wood burning fireplaces. This will be accomplished by replacing non-certified appliances with certified wood stoves, pellet stoves, or gas log fireplaces before the resale of a dwelling. In addition to phasing out non-certified appliances, the Town will rely on a mandatory wood burning curtailment. This mandatory curtailment program will initially exempt certified wood stoves, but may include all wood burning if more reductions are needed to attain the Standard.

As a contingency, the replacement schedule may be accelerated if the Town does not attain the Federal PM-10 Standard by January 1, 1993. The accelerated schedule will require replacement of all non-certified wood burning appliances by November 1, 1994. This contingency measure may be instituted if the primary control strategy is insufficient to bring the Town into attainment with the Standard.

The adopted Town ordinance and a discussion of the air quality impact is included in this section. A detailed analysis of the air quality impact is included in Appendix I, "Methodology to Determine Control Effectiveness."

6.1 Particulate Emissions Regulations

Chapter 8.30, Particulate Emissions Regulations, was adopted by the Town Council of the Town of Mammoth Lakes. Enforcement of the following ordinance commences on December 7, 1990.

TABLE 6.1

LIST OF ADOPTED REGULATIONS

SECTION	REGULATION
8.30.020	DEFINITIONS
8.30.030	STANDARDS FOR REGULATION OF SOLID FUEL APPLIANCES <ul style="list-style-type: none"> - Limits installation of wood burning appliances after January 1, 1991 to EPA Phase II Certified Stoves or Pellet Stoves - Allows 1 wood burning fireplace in hotel/condo common area - Requires the Town to maintain records of certified stoves
8.30.040	DENSITY LIMITATIONS <ul style="list-style-type: none"> - Limits new wood stoves to one per dwelling, but allows one additional pellet stove per dwelling. - New dwellings cannot use wood heat for primary heating - Requires certified inspection of new installations
8.30.050	REPLACEMENT OF NON-CERTIFIED APPLIANCES UPON SALE OF PROPERTY <ul style="list-style-type: none"> - Non-certified wood stoves and fireplaces must be replaced, removed or rendered inoperable prior to the sale of property - Requires a written exemption for property that does not include a wood burning appliance
8.30.060	SOLID FUEL BURNING APPLIANCE REPLACEMENT SCHEDULE <ul style="list-style-type: none"> - Contingency Measure: If monitoring does not show attainment by January 1, 1993, all non-certified solid fuel appliances must be replaced by November 1, 1994
8.30.070	OPACITY LIMITS <ul style="list-style-type: none"> - Limits wood smoke opacity to 40% till January 1, 1994 and 20% thereafter
8.30.080	PROHIBITED FUELS <ul style="list-style-type: none"> - Prohibits trash and coal burning
8.30.090	MANDATORY CURTAILMENT <ul style="list-style-type: none"> - Requires Town Council to appoint an Air Quality Manager - Burn ban shall be called when PM-10 levels reach 130 $\mu\text{g}/\text{m}^3$ - Notice shall be given on radio, TV, phone message & posted - Requires posting of notice to inform rental unit occupants that curtailments may be called. - Renters shall be responsible on no burn days. - Exempts certified appliances and pellet stoves from curtailment, total ban could be called if air quality compliance is not met

- Continued on next page -

TABLE 6.1, continued
LIST OF ADOPTED REGULATIONS

<u>SECTION</u>	<u>REGULATION</u>
8.30.100	POLLUTION REDUCTION EDUCATION PROGRAMS
8.30.110	ROAD DUST REDUCTION MEASURES <ul style="list-style-type: none">- Requires vacuum street sweeping of the curbers- Requires vehicle miles travelled (VMT) reduction measures for new developments- Limits peak VMT in the Town to 106,600 vehicle miles travelled
8.30.120	FEEES
8.30.130	PENALTIES

Chapter 8.30

PARTICULATE EMISSIONS REGULATIONS

Sections:

Section 8.30.010,	Purpose
Section 8.30.020,	Definitions
Section 8.30.030,	Standards for Regulation of Solid Fuel Appliances
Section 8.30.040,	Density Limitations
Section 8.30.050,	Replacement of Non-Certified Appliances Upon Sale of Property
Section 8.30.060,	Solid Fuel Burning Appliance Replacement Schedule
Section 8.30.070,	Opacity Limits
Section 8.30.080,	Prohibited Fuels
Section 8.30.090,	Mandatory Curtailment
Section 8.30.100,	Pollution Reduction Education Programs
Section 8.30.110,	Road Dust Reduction Measures
Section 8.30.120,	Fees
Section 8.30.130,	Penalties

Section 8.30.010, PURPOSE

The purpose of this chapter is to improve and maintain the level of air quality of the Town of Mammoth Lakes so as to protect and enhance the health of its citizens by controlling the emissions of particulate matter into the air of the community of Mammoth Lakes.

Section 8.30.020, DEFINITIONS

A. "EPA" shall mean the United States Environmental Protection Agency.

B. "EPA-Certified Appliance" means any wood or other solid fuel burning appliance utilized for space or water heating or cooking that meets the performance and emission standards as set forth in Part 60, Title 40, Subpart AAA Code of Federal Regulations, February 26, 1988. Phase I appliances must meet the emission requirements of no more than 5.5 grams per hour particulate matter emission for catalytic and 8.5 grams per hour for non-catalytic appliances. Phase II requirements are 4.1 and 7.5 grams per hour respectively. For existing appliances, Oregon Department of Environmental Quality (DEQ) certification shall be equivalent to EPA certification. All other solid fuel appliances, including fireplaces, shall be considered non-certified.

C. "Pellet Fueled Wood Heater" means any wood heater designed to heat the interior of a building that operates on pelletized wood and has an automatic feed.

D. "Permanently Inoperable" means modified in such a way that the appliance can no longer function as a solid fuel heater or easily be remodified to function as a solid fuel heater. Conversion to other fuels, such as gas, is permitted.

E. "Solid Fuel Burning Appliance, Heater, or Device" means any fireplace, wood heater, or coal stove or structure that burns wood, coal, or any other nongaseous or nonliquid fuels, or any similar device burning any solid fuel used for aesthetic, water heating, or space heating purposes.

Section 8.30.030, STANDARDS FOR REGULATION OF SOLID FUEL APPLIANCES

A. After December 7, 1990 (the effective date of this ordinance), no solid fuel burning appliance shall be permitted to be installed within the Town of Mammoth Lakes unless said device is certified as meeting the emission requirements of the U. S. Environmental Protection Agency (EPA) for Phase II certification. This shall not prohibit retailers from selling, prior to January 1, 1991, stock on hand as of the date of this ordinance as long as that stock meets EPA certification for Phase I and the seller can document through invoices or other means that the device was acquired prior to the adoption of this ordinance. After January 1, 1991, all appliances installed in the Town of Mammoth Lakes must meet EPA Phase II certification.

B. The restrictions of this section shall apply to all solid fuel devices including unregulated fireplaces. Exceptions will be made for fireplaces supplied with gas and fitted with artificial logs and for one fireplace located in a hotel/motel lobby or similar common area lobby or in the common area of a condominium project. Said fireplaces shall be subject to burning curtailment episodes as administered under Section 8.30.100.

C. For the purposes of enforcing this chapter, the Town shall keep a record of all certified appliances installed in Mammoth Lakes in accordance with this Chapter and of properties which have been determined to conform to the requirements of this Chapter.

Section 8.30.040, DENSITY LIMITATIONS

A. No more than one solid fuel appliance may be installed in any new dwelling or nonresidential property. Existing properties with one or more existing solid fuel appliances may

not install additional solid fuel appliances. One pellet fueled wood heater per dwelling shall be excepted from the provisions of this paragraph.

B. Solid fuel appliances shall not be considered to be the primary form of heat in any new construction.

C. In addition to any inspections required by Title 15 of the Town of Mammoth Lakes Municipal Code, all new and replacement appliances shall be inspected by an inspector or installed by an installer certified by the Wood Heating Education and Research Foundation for installation of solid fuel appliances or equivalent certification. Said installer or inspector shall verify in writing that the installation has been performed in accordance with all requirements for the appliance having been installed and file the certification with the Town of Mammoth Lakes. Said installers or inspectors shall verify their qualifications with the Town of Mammoth Lakes Building Department before appliance certification will be accepted by the Town.

Section 8.30.050, REPLACEMENT OF NON-CERTIFIED APPLIANCES UPON SALE OF PROPERTY

A. Prior to the completion of the sale of any real property within the Town of Mammoth Lakes, all existing non-certified solid fuel appliances shall be replaced, removed, or rendered permanently inoperable. The Building Department, or a qualified inspector as designated by the Building Department, shall inspect the appliance(s) in question to assure that they meet the requirements of this chapter. Within five working days from the date of the inspection, the Building Department shall issue a written certification of compliance or non-compliance for the affected property. If the inspection reveals that the subject property does not comply with the requirements of this chapter, all noncomplying solid fuel appliances shall be replaced, removed, or rendered permanently inoperable. In this event reinspection shall be required prior to certification of compliance.

B. If real property is to be sold which does not contain a solid fuel appliance, a form approved by the Building Department, containing the notarized signatures of the seller, the buyer, and the listing real estate agent attesting to the absence of any solid fuel device, may be accepted in lieu of an inspection. A written exemption shall be issued by the Building Department.

C. No appliances removed under the provisions of this Section may be replaced except as provided by this Chapter.

D. This section shall not be applicable to sales or other transfers of real property which have been completed prior to February 15, 1991.

Section 8.30.060, SOLID FUEL BURNING APPLIANCE REPLACEMENT SCHEDULE

The Town shall review emissions levels by January 1, 1993. Should emissions not have reached attainment of the NAAQS, as determined by monitoring by the Great Basin Air Pollution Control District or the Town, by that January 1, 1993, all non-certified solid fuel appliances within the Town shall be replaced by November 1, 1994.

Section 8.30.070, OPACITY LIMITS

No person shall cause or permit emissions from a solid fuel appliance to exceed an opacity greater than 40%, as identified by the shade designated number two on the Ringelmann Chart, for a period or period aggregating more than three minutes in any one hour period. Emissions created during a 15 minute start-up period are exempt from this regulation. This regulation shall remain in effect until January 1, 1994, at which time, the opacity limit shall be 20% as designated by the shade number one on the Ringelmann Chart.

Section 8.30.080, PROHIBITED FUELS

Burning of the the following fuels within the Town of Mammoth Lakes shall be in violation of this ordinance:

1. Treated wood
2. Plastic products
3. Rubber products
4. Waste petroleum products
5. Paints and solvents
6. Colored paper products including magazines and wrapping paper.
7. Coal

Section 8.30.090, MANDATORY CURTAILMENT

A. The Town Council shall appoint an Air Quality Manager. The duty of the Air Quality Manager shall be to determine when curtailment of solid fuel combustion in the Town of Mammoth Lakes is necessary and to notify the community that curtailment is required. .

B. Determination that curtailment is required shall be made when PM-10 levels have reached 130 micrograms/m³ or when adverse meteorological conditions are predicted to persist. Should it be determined that 130 micrograms/m³ is not a low

enough threshold to prevent the Town from violating the National Ambient Air Quality Standard for 24 hours (NAAQS, 24hr), that threshold may be lowered by resolution of the Town Council of the Town of Mammoth Lakes.

C. Upon the determination that curtailment is required, the Air Quality Manager shall contact all radio stations and television stations in Mammoth Lakes and have them broadcast that it is required that there be no wood or other solid fuel burning. The Air Quality Manager shall also record a notice on a telephone line dedicated to this purpose and post a notice in the Town Offices. Upon such notice, all wood and other solid fuel combustion shall cease.

D. All dwelling units being rented on a transient basis which contain a non-certified solid fuel appliance shall post, in a conspicuous location near said appliance, the following notice:

"The burning of wood in the fireplace or stove is not permitted on days designated as burning curtailment days by the Town of Mammoth Lakes. To determine if burning is allowed, turn to channel 5 on the television, 106.3 FM on the radio, or call the manager. The information will be updated twice daily, if necessary."

E. All persons renting units for transient occupancy shall include in their rental agreement a notice that solid fuel burning may be prohibited on certain days and that the person signing the rental agreement shall be responsible for assuring that the no-burn requirements are obeyed during the rental period identified on the rental agreement.

F. For residences where a solid fuel appliance is the sole means of heat, these curtailment regulations do not apply. For a residence to be considered as having solid fuel as its sole source of heat, the owner must apply to the Building Department for an exemption and the Department must inspect the residence and certify that, in fact, no other adequate source of heat is available to the structure. Adequate source shall mean that the alternate source of heat cannot produce sufficient heat for the residence without causing a hazard. A written exemption will then be granted. Where an adequate alternate source of heat is determined to have been removed from the structure in violation of building codes, a sole source exemption shall not be issued. Sole source exemptions shall not be granted for non-residential uses. The sole source exemptions shall expire one year from the date that the Town adopts a financing or incentive program for replacement of non-certified appliances or on November 1, 1994, whichever date is earlier.

G. Households with very low income levels as defined by the Department of Housing and Urban Development may apply to the

Air Quality Manager for exemption from no-burn days. The low income exemptions shall expire one year from the date that the Town adopts a financing or incentive program for replacement of non-certified appliances or on November 1, 1994, whichever date is earlier.

H. Appliances certified as meeting the emission requirements of the EPA as defined in Section 8.30.020 B. and pellet fueled wood heaters shall not be subject to the provisions of this section. Should future monitoring show that exempting certified appliances results in violations of the NAAQS, 24hr, the Town shall implement a total ban on solid fuel burning based upon the thresholds identified above.

Section 8.30.100, POLLUTION REDUCTION EDUCATION PROGRAMS

The Town Manager or his designee is hereby directed to undertake such public education programs as are reasonably calculated to reduce particulate air pollution within the Town of Mammoth Lakes, including particulate emissions from sources other than solid fuel burning devices. In addition to the notification measures listed in Section 8.3.010, the public education programs shall include additional measures to inform the public of burning curtailment requirements.

Section 8.30.110, ROAD DUST REDUCTION MEASURES

A. The Director of Public Works is hereby directed to undertake a vacuum street sweeping program to reduce PM-10 emissions resulting from excessive accumulations of cinders and dirt.

B. The Town shall, in its review of development projects, incorporate such measures which reduce total vehicle miles travelled. Examples of such measures include, but are not limited to, circulation system improvements, mass transit facilities, private shuttles, and design and location of facilities to encourage pedestrian circulation. The goal of the Town's review shall be to limit peak vehicle miles travelled to 106,600 on any given day.

Section 8.30.120, FEES

A fee shall be charged for the inspection and permitting services of the Town of Mammoth Lakes. Said fee shall be established in the Town Master Fee Schedule.

Section 8.30.130, PENALTIES

A. It is illegal to violate any requirements of this chapter. Any owner of any property which is in violation of the requirements of this chapter shall be guilty of an infraction. Any person operating a solid fuel appliance in

violation of this chapter is guilty of an infraction. The third violation by the same person within a 12 month period shall constitute a misdemeanor. Prosecution of any violation of Subsections 8,30.090 F and G, relating to exemptions from curtailment, may be against the property owner, the occupant, or both.

B. Violation of any portion of this chapter may result in assessment of civil penalties against the property and against an individual person or persons as follows:

First violation within a 12 month period, \$50.

Second violation within a 12 month period, \$100.

Third violation within a 12 month period, \$250.

Four or more violations within a 12 month period \$500. per violation.

C. Each and every day a violation exists is a new and separate violation. Right of appeal, hearings, and collection of civil penalties shall be pursuant to the procedures set forth in Chapter 7.20, "Nuisances," of the Municipal Code of the Town Of Mammoth Lakes.

D. Nothing in this section shall prevent the Town from pursuing criminal penalties or using any other means legally available to it in addressing violations of this chapter.

E. Whenever necessary to make an inspection to enforce any of the provisions of this code, or whenever the Air Quality Manager or his authorized representative has reasonable cause to believe that there exists in any building or upon any premises any condition which violates the provisions of this chapter, the Air Quality Manager or his authorized representative may enter such building or premises at all reasonable times to inspect the same or to perform any duty imposed upon the Air Quality Manager by this code, provided that if such building or premises be occupied, he shall first present proper credentials and request entry; and if such building or premises be unoccupied, he shall first make a reasonable effort to locate the owner or other persons having charge or control of the building or premises and request entry. If such entry is refused, or if the owner or person having charge or control of the building or premises cannot be contacted, the Air Quality Manager or his authorized representative shall have recourse to every remedy provided by law to secure entry.

6.2 Summary of the Air Quality Impact

This section summarizes the results of the detailed air quality analysis presented in Appendix I. As discussed in previous sections, the final control strategy must be successful for both wood smoke (Case A) and road dust/cinders (Case B) dominated days. The analysis in Appendix I is based on a road dust and cinder dominated design day. Since the two cases are algebraically related by the source contributions from road dust and wood burning, a translation of the calculated Case B air quality impact is used to determine the Case A impact. The results, which are shown in Tables H-1 and H-2 in Appendix H, show that the adopted regulations are adequate to attain the standard on wood smoke dominated days (Case A).

6.2.1 Wood Burning Regulations

The wood burning regulations include; banning the installation of non-certified appliances, phasing out existing non-certified wood burning devices, requiring certified inspectors, and instituting a mandatory wood burning curtailment. The wood burning curtailment initially includes an exemption for certified wood stoves. (See Appendix G for a list of EPA Certified wood heaters.) This exemption may be dropped if it is determined that more emission reductions are needed. The primary strategy relies on the change-out of non-certified wood burning appliances before a property can be sold. A contingency regulation is also included in the ordinance to accelerate the rate of change-over of the non-certified appliances if the Town has not attained the Standard by January 1, 1993. The decision making process to change the primary strategy for wood burning is shown in Figure 6.1.

For the primary control strategy, the estimates of the ambient impact of wood burning on no burn days is shown below. It is shown with and without the exemptions for certified wood stoves. For comparison, a strategy that does not include the mandatory curtailment is also shown. These estimates are based on the road dust and cinder dominated design day (Case B).

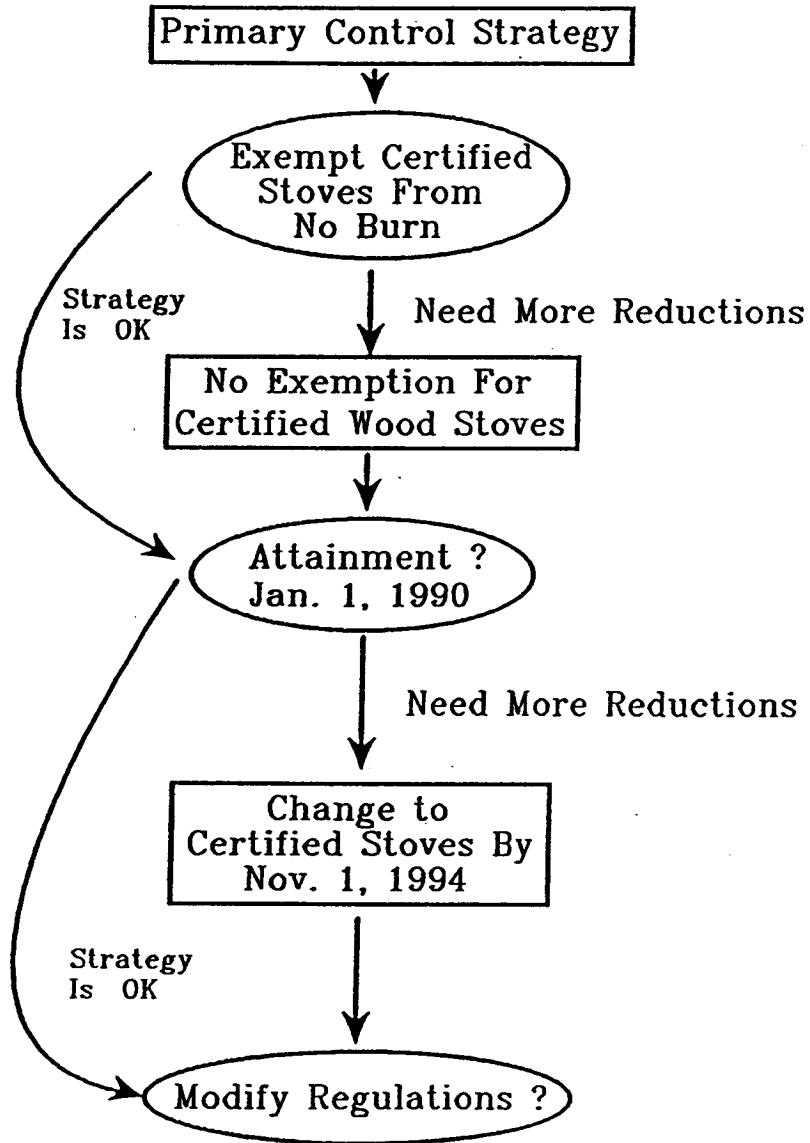
Primary Control Strategy for Wood Burning:

	Wood Burning					
	Ambient PM-10 Contribution* ($\mu\text{g}/\text{m}^3$)					
	1990	1991	1993	1995	2000	2005
<u>Mandatory No Burn</u>						
Exempt Cert Stoves	56.2	58.9	59.7	60.8	63.7	66.5
No Exemption	56.0	58.0	54.1	51.2	44.2	37.0
<u>W/O Mandatory No Burn</u>						
Wood Burning	112.0	116.0	108.2	102.4	88.4	74.0

* Based on the road dust and cinder dominated design day.

Figure 6.1

DECISION TREE TO MODIFY THE
PRIMARY CONTROL STRATEGY
FOR WOOD BURNING



A similar estimate for the secondary control strategy is shown below. The secondary control strategy or contingency measure, requires the change-out of non-certified wood burning appliances by November 1, 1994. This is in addition to the measures that are included in the primary strategy.

Secondary Control Strategy for Wood Burning:

	Wood Burning					
	Ambient PM-10 Contribution* ($\mu\text{g}/\text{m}^3$)					
	<u>1990</u>	<u>1991</u>	<u>1993</u>	<u>1995</u>	<u>2000</u>	<u>2005</u>
<u>Mandatory Curtailment</u>						
Exempt Cert. Stove	56.3	58.9	59.7	55.7	60.8	65.8
No Exemption	56.0	58.0	54.1	27.9	30.4	32.9
<u>W/O Mandatory Curtailment</u>						
Wood Burning	112.0	116.0	108.2	55.7	60.8	65.8

* Based on the road dust and cinder dominated design day.

6.2.2 Vacuum Sweeping and Traffic Reduction

The control strategy relies on vacuum street sweeping to reduce 34% of the PM-10 emissions from re-entrained road dust and cinders. With the expected growth in the Town, the strategy must also address the problem of increasing traffic as it directly increases the road dust emissions. A cap of 106,600 vehicles miles travelled is included in the plan. This cap will provide for 60% growth from the present traffic estimates.

	Traffic - Reentrained Road Dust					
	Ambient PM-10 Contribution* ($\mu\text{g}/\text{m}^3$)					
	<u>1990</u>	<u>1991</u>	<u>1993</u>	<u>1995</u>	<u>2000</u>	<u>2005</u>
Traffic	61.4	63.9	68.8	73.9	86.3	98.7

* Based on the road dust and cinder dominated design day.

6.2.3 Summary of Ambient PM-10 Contributions

Figures 6.2 and 6.3 show the combined estimates of the ambient contributions for wood burning and traffic to the overall PM-10 concentration. The two figures show the estimates for the primary and the secondary control strategies. For either strategy the analysis shows that the Town can attain the PM-10 Standard by 1995 and maintain the air quality till beyond the year 2005.

FIGURE 6.2

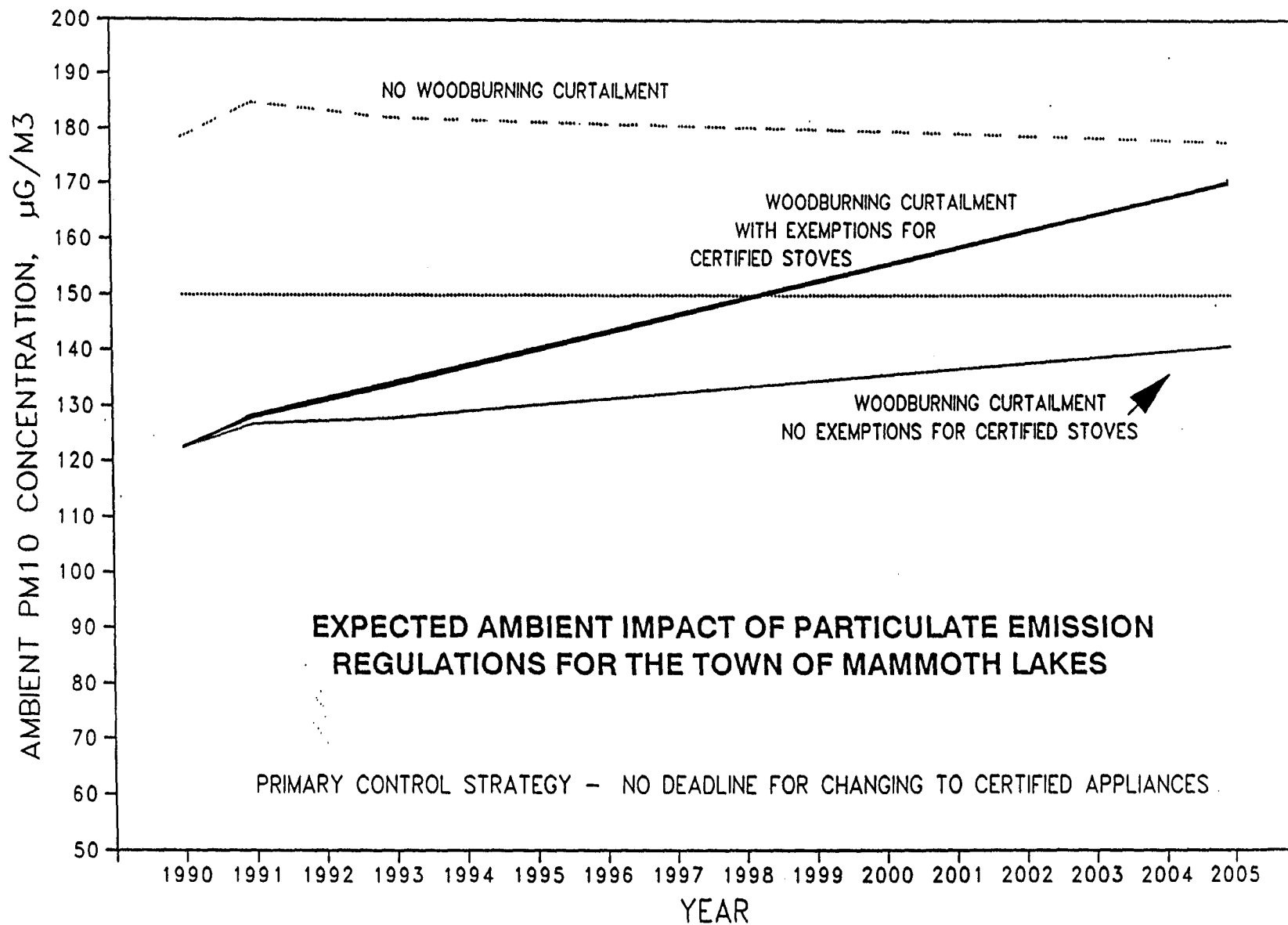
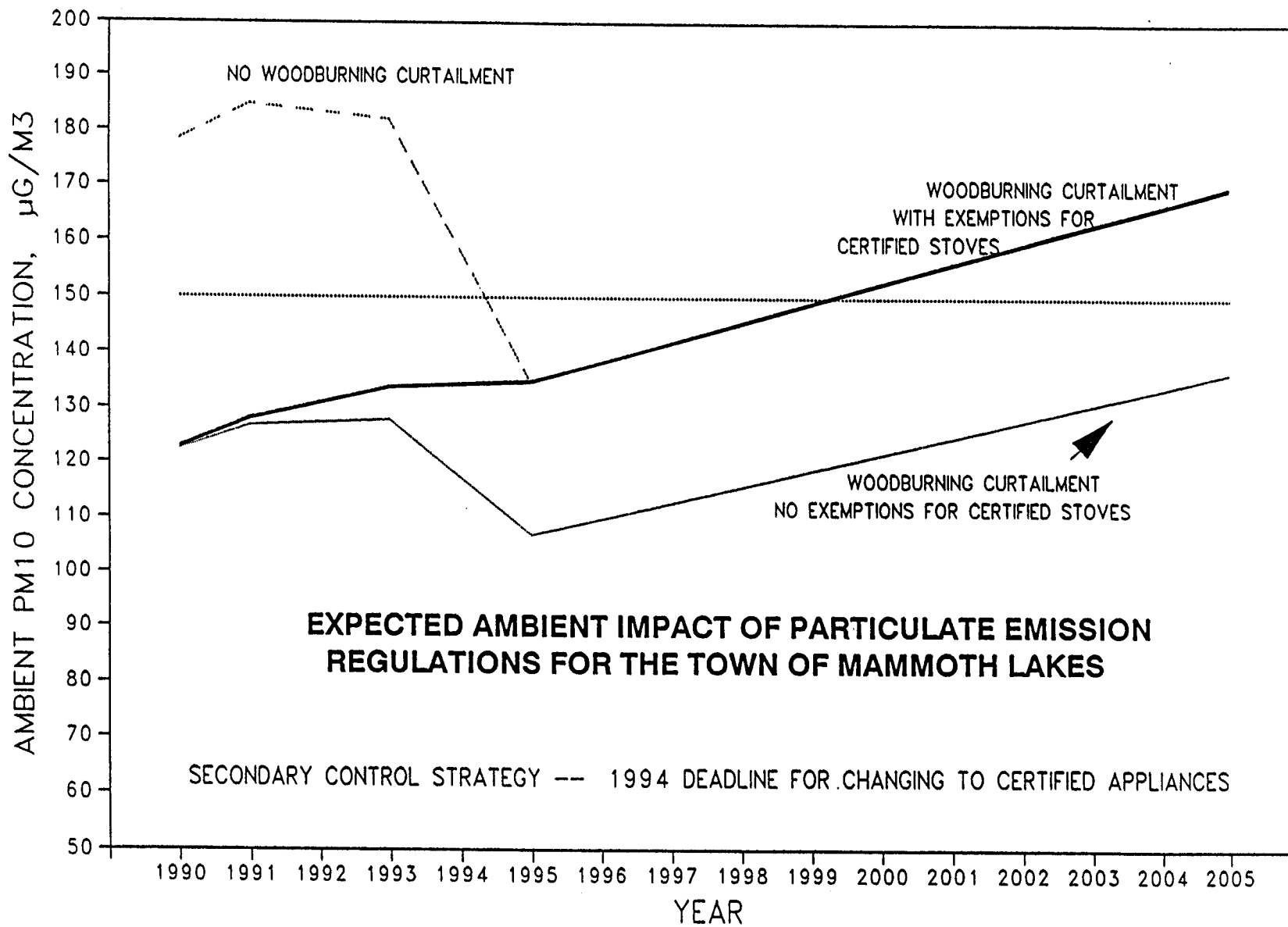


FIGURE 6.3



6-15