State of California
Environmental Protection Agency
AIR RESOURCES BOARD

Notice of Decision and
Response to Significant Environmental Issues

Item:	ADOPTION OF AN AIRBORNE TOXIC CONTROL MEASURE TO REDUCE EMISSIONS OF TOXIC AIR CONTAMINANTS FROM OUTDOOR RESIDENTIAL WASTE BURNING NEW SECTION 93113,TITLE 17, CALIFORNIA CODE OF REGULATIONS
Approved by:	Resolution 02-2
Adopted by:	Executive Order G-02-069 Dated: December 13, 2002
Agenda Item No.:	02-1-3
Public Hearing Date:	February 21, 2002
Issuing Authority:	Air Resources Board

Comment: Residential waste burning is the practice of outdoor burning of household wastes associated with one and two family homes. These household wastes include materials such as garbage, plastics, paper, cardboard, cloth, and processed wood. Typically, 55 gallon metal drums, known as burn barrels, are used for this burning. The smoke and ash created by these fires contain many harmful pollutants, including polychlorinated dibenzo-p-dioxins and dibenzofurans (collectively known as dioxins), polycyclic aromatic hydrocarbons, benzene, 1,3-butadiene, and polychlorinated biphenyls, as well as particulate matter. The airborne toxics control measure (ATCM) prohibits the outdoor burning of residential waste materials other than natural vegetation, as well as the use of burn barrels. The ATCM also requires any residential burning to take place only on permissive burn days and requires the use of an ignition device approved by the air pollution control officer. Exemptions in very low population density areas are included for the burning of paper and cardboard and for the use of burn barrels. The exemptions must be renewed every five or ten years as long as the provisions of the exemption criteria continue to be met. The prohibitions in the regulation become

effective January 1, 2004, preceded by one year of public education and outreach.

In oral and written comments, members of the public raised a number of concerns regarding potential adverse environmental impacts of prohibiting residential burning and the mitigation of these impacts. These issues included concerns about the impacts of additional waste that can no longer be burned, landfill capacities and waste diversion requirements, the potential for increased illegal dumping and waste stockpiling, the burning of waste materials indoors, the impacts of increased vehicle emissions from waste disposal trips, and fire safety concerns. Commentors also recognized the benefits to public health from reducing toxic emissions and reducing the residual contaminants found in the ash from residential burning.

Response: These issues were initially addressed in the Initial Statement of Reasons (ISOR, also referred to as the Staff Report) dated January 4, 2002, which is incorporated by reference herein. The comments received during the public review periods and the public hearing are summarized and responded to in the Final Statement of Reasons (FSOR) for this regulatory item which is incorporated by reference herein, in particular the responses to comments in the Environmental Impacts section.

California Health and Safety Code (HSC) section 39665(b) requires the Board to address the technological feasibility of proposed ATCMs, as well as consider the availability, suitability, and relative efficacy of substitute products of a less hazardous nature. In addition, HSC section 39666 further requires that any control measure for a toxic air contaminant without a Board-specified threshold be designed to reduce emissions to the lowest achievable level through the application of best available control technology, or a more effective control method if necessary to reduce risk. These factors, as well as the potential for adverse environmental impacts were considered in developing the ATCM.

Both the materials burned and the methods used to burn them contribute to the public health impacts. Dioxins are a by-product of the combustion of residential waste materials containing carbon and chlorine during low temperature, poor oxygen conditions. The formation of dioxins can be minimized or eliminated through careful control of combustion conditions, including maintaining combustion temperatures at approximately 1000^{o}C for a minimum of one second. For major sources such as municipal and hospital waste incinerators, combustion conditions can be carefully controlled, and the required high temperature and residence time can be achieved. However, this type of controlled combustion is not feasible for small residential burning sources such as backyard burn barrels. No external control technologies, or changes in burning practices, are

available or achievable to reduce or eliminate dioxins emissions from residential burning. In addition, both air quality inspectors and fire protection officials report that they often find prohibited materials concealed in burn barrels. Therefore, the use of burn barrels is prohibited in the ATCM to facilitate enforcement efforts.

The ATCM does provide for limited exemptions in very rural areas. The exemptions consider potential health impacts based on population density within census zip code areas, as well as the potential for lack of available waste disposal alternatives and the potential for adverse environmental impacts in these remote areas. In census zip code areas with less than 3.0 persons per square mile, the burning of paper and cardboard and the use of burn barrels will be allowed. In census zip code areas with 3.0 to 10.0 persons per square mile, the burning of paper and cardboard is allowed at the discretion of the air pollution control officer, while burn barrels will be allowed if the local fire official documents that they are necessary for fire safety. Moreover, in census zip code areas where the population exceeds 10.0 persons per square mile, the air district can designate very low-density sub-areas where exemptions will also be allowed.

The exemptions are designed to mitigate the potential for adverse environmental impacts such as illegal dumping and waste storage, as well as indoor waste burning. Moreover, we believe that a comprehensive public education and outreach program, prior to implementation of the prohibitions, will educate the public on the health impacts of burning household waste and thereby further reduce the potential for these adverse impacts. The educational program will also include information on alternative waste disposal options. The educational materials will be designed to allow local authorities to tailor the information to include locally available options. We will also include information on the potential health impacts and fire safety concerns of burning residential waste indoors to deter this practice as an alternate waste disposal method.

We also examined the potential for impacts to landfill capacities and waste diversion rates. In all but six air districts, residents are already prohibited from burning some types of residential waste. Therefore, in most areas, residents are already using some form of alternative waste disposal for some portion of their residential waste. Based on the amount of waste typically generated by a California household, we estimate that the additional waste sent to landfills statewide is much less than one percent of the current statewide total. The greatest potential impact could be seen in the six air districts where there are no current restrictions on the type of waste that can be burned and therefore where some households may not be using any other form of waste disposal. However, some of these waste materials, such as some food waste and other organic materials, can be

composted. Much of the other waste, such as plastics, cans, and paper, can, and should be, recycled. With regards to landfill diversion requirements, the California Integrated Waste Management Board (CIWMB) allows rural counties to develop waste diversion targets less than 50 percent. The CIWMB has not penalized waste jurisdictions with less than 50 percent diversion by 2000 if they can make a demonstration of good faith efforts to encourage and increase diversion with recycling, composting, and other incentive programs.

Comments were also received on the impacts of vehicle emissions generated by additional vehicle trips to waste facilities in comparison to the emissions from burning the residential waste. We calculated that a California household burning all of its non-vegetation household waste outdoors would generate about 25 pounds of particulate matter emissions each year. The average diesel-powered refuse truck travelling 5200 miles per year would emit approximately the same amount of particulate matter as one burn barrel. Therefore, even in remote areas, weekly service of several households with a diesel-powered refuse truck could substantially reduce the toxic air contaminants in ambient air. We also calculated the particulate matter emissions from an average light-duty truck self-hauling waste over the period of one year and found that the particulate matter emissions from the additional truck travel is approximately 500 times lower than the annual emissions from one burn barrel.

Finally, with regards to the fire hazards posed by outdoor waste burning at residences, burn barrels do not consistently prevent or reduce fire hazards. We believe that a properly tended pile, following all recommended fire safety precautions, offers the same level of fire safety as a burn barrel. In fact, some fire officials stated that burn barrels may actually result in greater fire danger due to the tendency for burners to walk away from actively burning and smoldering materials in a burn barrel. However, the ATCM also contains exemption provisions in the most rural areas of the State to allow burn barrels if the ranking local fire official requests their use for fire safety purposes.

In Resolution 02-2 approving the regulation (which is incorporated by reference), the Board made various findings pertaining to the potential environmental impacts of the ATCM. Specifically, the resolution directed ARB staff to: 1) work with the California Air Pollution Control Officers Association (CAPCOA), the Regional Council of Rural Counties, federal, State, and local fire agencies, and public health organizations to initiate a public education and outreach program to assist the air districts in implementing the ATCM; 2) work with the CIWMB in its efforts to address local landfill diversion issues and to promote recycling and waste reduction through local educational programs; 3) work with CAPCOA to provide local maps clearly identifying areas qualifying for exemptions and

to assist the air districts in filing requests for exemptions where appropriate; and, 4) report back to the Board within one year of the implementation date of the ATCM on the progress of air district implementation of the regulation and the ARB's outreach and education efforts to facilitate compliance with the ATCM's requirements.

Certified: _____
Amy Whiting
Regulations Coordinator

Date: December 18, 2002