RULE 445. WOOD-BURNING DEVICES

(a) Purpose

The purpose of this rule is to reduce the emission of particulate matter from wood-burning devices.

(b) Applicability

The provisions of this rule shall apply to specified persons or businesses within the South Coast Air Basin portion of the South Coast Air Quality Management District:

- (1) Any person that manufacturers, sells, offers for sale, or installs a wood-burning device;
- (2) Any commercial firewood seller that sells, offers for sale, or supplies wood or other wood-based fuels intended for burning in a wood burning-device or portable outdoor wood-burning device; and
- (3) Any property owner or tenant that operates a wood-burning device or portable outdoor wood-burning device.

(c) Definitions

- (1) COMMERCIAL WOOD-BASED FUEL SELLER means any operation that has a business license that sells, or offers for sale, or supplies packaged, bundled or bulk firewood, manufactured firelogs, or wood pellets.
- (2) COOKSTOVE means any wood or wood-based fuel-fired device that is designed and used for cooking food and has the following characteristics as defined in Title 40 of the Code of Federal Regulations Section 60.531, February 28, 1988, or any subsequent revision:
 - (A) An oven, with a volume of 0.028 cubic meters (1 cubic foot) or greater, and an oven rack;
 - (B) A device for measuring oven temperatures;
 - (C) A flame path that is routed around the oven;
 - (D) A shaker grate;
 - (E) An ash pan;
 - (F) An ash clean-out door below the oven; and

- (G) The absence of a fan or heat channels to dissipate heat from the appliance.
- (3) DEDICATED GASEOUS-FUELED FIREPLACE means any indoor or outdoor fireplace, including, but not limited to, a gas log fireplace, either constructed on-site, or factory built, fueled exclusively with a gaseous fuel such that the burner pan and associated equipment are affixed to the masonry or metal base of the fireplace.
- (4) FIREPLACE means any permanently installed indoor or outdoor masonry or factory-built device used for aesthetic or space-heating purposes and designed to operate with an air-to-fuel ratio greater than or equal to 35-to-1.
- (5) LOW INCOME HOUSEHOLD means any household that receives financial assistance through reduced electric or gas bills from an electric or natural gas utility based on household income levels.
- (6) MANDATORY WINTER BURNING CURTAILMENT
 - (A) Means any calendar day or consecutive calendar days during the wood burning season so declared to the public by the Executive Officer when ambient levels of particulate matter of 2.5 microns in size or less (PM2.5) is forecast to exceed 30 μg/m³ for a specific source/receptor area.
 - (B) Applies to the entire South Coast Air Basin whenever a PM2.5 level of greater than 30 μg/m³ is predicted for a source receptor area containing a monitoring station that has recorded a violation of the federal 24-hour PM2.5 National Ambient Air Quality Standard for either of the two previous three-year design value periods. The design value is the three-year average of the annual 98th percentile of the 24-hour values of monitored ambient PM2.5 data.
- (7) MANUFACTURED FIRELOG means a commercial product expressly manufactured for use to simulate a wood burning fire in a wood-burning device.
- (8) MASONRY HEATER means any permanently installed device that meets the definition of a masonry heater in ASTM E 1602-03.
- (9) NEW DEVELOPMENT means residential or commercial, single or multibuilding unit, which begins construction on or after March 9, 2009. For the purposes of this definition, construction has begun when the building

- permit has been approved or when the foundation for the structure is started, whichever occurs first.
- (10) PELLET-FUELED WOOD-BURNING HEATER means any wood-burning heater that is operated on any pellet fuel, and is either U.S. EPA Phase II-certified or exempted under U.S. EPA requirements as defined in Title 40 Code of Federal Regulations, Part 60, Subpart AAA, February 28, 1988, or any subsequent revision.
- (11) PERMANENTLY INSTALLED means any device built or installed in such a manner that the device is attached to the ground, floor, or wall, and is not readily moveable. A free standing stove that is attached to an exhaust system that is built into or through a wall is considered permanently installed.
- (12) PORTABLE OUTDOOR WOOD-BURNING DEVICE means any portable outdoor device burning any wood-based fuel for aesthetic or space heating purposes including, but not limited to, fireplaces, burn bowls, and chimineas located on property zoned for residential uses.
- (13) SEASONED WOOD means wood of any species that has been sufficiently dried so as to contain 20 percent or less moisture content by weight as determined by
 - (A) ASTM Test Method D 4442-92, Standard Test Method for Use and Calibration of Hand-Held Moisture Meters; or
 - (B) A hand-held moisture meter operated in accordance with ASTM Test Method D 4444-92, Standard Test Methods for Use and Calibration of Hand-Held Moisture Meters; or
 - (C) An alternative method approved by the Executive Officer, the California Air Resources Board, and the U.S. Environmental Protection Agency.
- (14) SOLE SOURCE OF HEAT means the only permanent source of heat that is capable of meeting the space heating needs of a household.
- (15) SOUTH COAST AIR BASIN means the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange County as defined in California Code of Regulations, Title 17, Section 60104.
- (16) TREATED WOOD means wood of any species that has been chemically impregnated, painted, coated or similarly modified to improve resistance to insects, wood rot and decay, or weathering.

- (17) U.S. EPA CERTIFIED WOOD-BURNING HEATER means any device certified by the U.S. EPA to meet the performance and emission standards as defined in Title 40 Code of Federal Regulations, Part 60, Subpart AAA, February 28, 1988, or any subsequent revision.
- (18) WOOD-BASED FUEL means any wood, wood-based product, or non-gaseous or non-liquid fuel, including but not limited to manufactured firelogs, wood or pellet products. For the purpose of this rule, charcoal is not considered a wood-based fuel.
- (19) WOOD-BURNING DEVICE means any fireplace, wood-burning heater, pellet-fueled wood burning heater, or any similarly open or enclosed, permanently installed, indoor or outdoor device burning any wood-based fuel for aesthetic purposes, which has a heat input of less than one million British thermal units per hour (Btu/hr).
- (20) WOOD-BURNING HEATER means an enclosed, wood-burning device capable of space heating that meets all the criteria defined in Title 40 Code of Federal Regulations Section 60.531, February 28, 1988, or any subsequent revision including, but not limited to, wood stoves and wood-burning fireplace inserts.
- (21) WOOD BURNING SEASON means the consecutive entire months of November, December, January, and February.
- (22) WOOD-FIRED COOKING DEVICE means any cookstove, wood-fired oven or grill, or any device designed for burning any wood-based fuel for cooking purposes.

(d) Requirements

- (1) No person shall permanently install a wood-burning device into any new development.
- (2) Notwithstanding the requirements of paragraph (d)(1), no person shall sell, offer for sale, supply, or install, a new or used permanently installed indoor or outdoor wood-burning device or gaseous-fueled device unless it is one of the following:
 - (A) A U.S. EPA Certified wood-burning heater; or
 - (B) A pellet-fueled wood-burning heater; or
 - (C) A masonry heater; or
 - (D) A dedicated gaseous-fueled fireplace.

- (3) No person shall burn any product not intended for use as fuel in a woodburning device including, but not limited to, garbage, treated wood, particle board, plastic products, rubber products, waste petroleum products, paints, coatings or solvents, or coal.
- (4) A commercial firewood seller shall only sell seasoned wood from July 1 through the end of February the following year. Any commercial firewood seller may sell seasoned as well as non-seasoned wood during the remaining months.
- (5) Labeling and Sell-Through Provision
 - (A) Effective November 4, 2013, no commercial firewood seller shall sell, offer for sale, or supply wood-based fuel without first attaching a permanently affixed indelible label to each package or providing written notice to each buyer at the time of purchase of bulk firewood that at a minimum states the following:

Use of this and other solid fuel products may be restricted at times by law. Please check (1-877-4NO-BURN) or (www.8774NOBURN.org) before burning.

- (i) Alternative language, toll-free telephone number or web address for the information specified in subdivision (g) may be used, subject to Executive Officer approval.
- (ii) The Executive Officer shall specify guidelines for the aforementioned labeling requirements.
- (B) Any wood-based fuel packaged prior to November 4, 2013 may be sold, offered for sale or supplied up to November 4, 2015.

(e) Mandatory Winter Burning Curtailment

No person shall operate an indoor or outdoor wood-burning device, portable outdoor wood-burning device, or wood-fired cooking device during the wood burning season when a mandatory winter burning curtailment is forecast for the specific region where the device is located, or on a Basin-wide basis as defined in paragraph (c)(6).

(f) Exemptions

(1) The provisions of this rule shall not apply to wood-fired cooking devices designed and used for commercial purposes.

- (2) The provisions of paragraph (d)(1) shall not apply to new developments where there is no existing infrastructure for natural gas service within 150 feet of the property line or those 3,000 or more feet above mean sea level.
- (3) The provisions of paragraph (d)(2) shall not apply to an indoor or outdoor wood-burning device that is permanently installed and included in the sale or transfer of any existing development.
- (4) The provisions of (d)(2) shall not apply to properties that are registered as a historical site, or are contributing structures located in a Historic Preservation Overlay Zone, as determined by the applicable, federal, State, or local agency. Contributing structures are those buildings which are examples of the predominate styles of the area, built during the time period when the bulk of the structures were built in the Historic Preservation Overlay Zone.
- (5) The provisions of (d)(3) shall not apply to manufactured firelogs.
- (6) The provisions of (d)(5) shall not apply to wood-based fuel intended for the cooking, smoking, or flavoring of food.
- (7) The provisions of subdivision (e) shall not apply under the following circumstances:
 - (A) Residential or commercial properties where a wood-burning device is the sole source of heat; or
 - (B) A low income household; or
 - (C) Residential or commercial properties where there is no existing infrastructure for natural gas service within 150 feet of the property line; or
 - (D) Residential or commercial properties located 3,000 or more feet above mean sea level; or
 - (E) Ceremonial fires exempted under Rule 444 Open Burning.

(g) Administrative Requirements

The Executive Officer will provide public notice of a mandatory winter burning curtailment through one or more of the following methods:

- (1) A recorded telephone message;
- (2) Messages posted on the South Coast Air Quality Management District web site;
- (3) Electronic mail messages to persons or entities that have requested such notice;

- (4) Notifying broadcast and print media operating within the boundaries of the South Coast Air Basin; and
- (5) Any additional method that the Executive Officer determines is appropriate.

(h) Penalties

Any person that violates the provisions of subdivision (e) is subject to the following:

- (1) For first time violators during each wood burning season, completion of a wood smoke awareness course that has been approved by the Executive Officer or payment of a penalty of \$50;
- (2) For second time violators during each wood burning season, payment of a penalty of \$150 or submission of proof of installation of a dedicated gaseous-fueled fireplace within 90 days after receiving the Notice of Violation; and
- (3) For third time violators during each wood burning season, payment of a penalty of \$500 or implementation of an environmentally beneficial project as derived through the mutual settlement process.

(i) Severability

If any provision of this rule is held by judicial order to be invalid, or invalid or inapplicable to any person or circumstance, such order shall not affect the validity of the remainder of this rule, or the validity or applicability of such provision to other persons or circumstances.







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The following information has been prepared to assist in answering questions on SCAQMD Rule 445 – Wood Burning Devices. It should be noted that compliance determinations will be based on the specific Rule 445 language that can be viewed or downloaded at the following web site:

http://www.aqmd.gov/rules/reg/reg04/r445.pdf

REQUIREMENTS FOR NEW DEVELOPMENTS

When do the standards for new developments become effective?

The requirement to only install gaseous-fueled fireplaces and stoves is applicable to any new residential or commercial development that **begins construction on or after March 9, 2009**.

The date that **construction has begun** is when the building permit is approved or when the foundation for the structure is started, whichever is first.

What kind of fireplace or stove can be installed in new developments?

Any gaseous- or liquid-fueled fireplace, fireplace insert or stove can be installed in new developments. This includes any fireplace that is either factory-built or constructed on-site that is fueled exclusively with a gaseous fuel such that the burner pan and associated equipment are affixed to the metal or masonry base of the fireplace.

Gaseous-fueled devices include those fueled by either natural gas, propane (i.e., liquefied petroleum gas) or alcohol.







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Do these new development requirements apply to both indoor and outdoor fireplaces?

The requirements are applicable to any **permanently installed** device. **Permanently installed** is defined as built or installed such that it is attached to the ground, floor or wall and is not readily moveable. A free standing stove attached to an exhaust system that is built into or through a wall is considered permanently installed.

Are there any exemptions to the requirements for new developments?

There are two separate conditions where a cleaner wood-burning device can be installed in a new development:

- 1. properties 3,000 or more feet in elevation; and
- 2. properties where there is no existing infrastructure for natural gas service within 150 feet of the property line.

The cleaner wood-burning devices that could be installed under either of these two conditions include:

- ✓ U.S. EPA certified wood heaters:
- ✓ pellet-fueled heaters; and
- ✓ masonry heaters (not masonry fireplaces).

If you would like additional details on the hearth products defined as cleaner woodburning devices under Rule 445, please refer to the discussion below under the heading, "Requirements for Existing Developments."







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REQUIREMENTS FOR EXISTING DEVELOPMENTS

What is considered an existing development?

An existing development is a residential or commercial property where construction had finished prior to March 9, 2009. Construction is considered finished as of the date of issuance of a use and occupancy permit.

What can be built as a new hearth device in existing developments?

The devices in three cleaner wood-burning categories listed below (and any gaseous-fueled device) can be sold, offered for sale, or installed in existing developments.

- U.S. EPA certified wood heater (fireplace inserts or stoves)
 U.S EPA certified devices have an identification label on the unit and the model name and number are also listed on the following web site: http://www.epa.gov/Compliance/resources/publications/monitoring/caa/woodstoves/certifiedwood.pdf
- 2. Pellet-fueled heater
 - Pellet-fueled heaters can be operated on any pellet fuel including, but not limited to, ground, dried wood and other biomass wastes compressed into pellets and corn. Additional information on pellet heaters can be obtained from the U.S. EPA at the following web site: http://www.epa.gov/burnwise/pelletstoves.html
- 3. Masonry heater (not an open hearth fireplace)

 Technically listed as any device that meets the definition included in ASTM E 1602-03, a masonry heater is a site-built or site-assembled solid-fueled heating device, consisting of a firebox, a large masonry mass, and a maze of heat exchange channels. These devices are rare in warm climates such as Southern California but additional information can be obtained from the following U.S. EPA web site: http://www.epa.gov/burnwise/appliances.html#masonryheaters







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What can be installed as a retrofit into an existing wood-burning fireplace in an existing development?

There are essentially no Rule 445 restrictions as to what can be installed as a retrofit into a fireplace in an existing development. Residents may opt to install a gaseous-fueled, electric or visual product intended to simulate or replace wood burning or there may be other options. Residents that wish to continue burning wood but are interested in attempting to reduce emissions may opt to install a variety of products including a U.S. EPA Phase 2 Qualified Retrofit Device. Additional information on these products can be found at the web site below.

http://www.epa.gov/burnwise/fireplacelist.html#retrofits

Please note that local governments may have special codes or provisions when installing devices in fireplaces at existing developments. Also, please remember that all wood-based fuel burning is prohibited during a Mandatory Winter Burning Curtailment. This includes wood-based fuels used in indoor and outdoor devices.

Do the requirements for existing developments apply to both indoor and outdoor fireplaces?

The requirements apply to any **permanently installed** device either indoors or outdoors. **Permanently installed** is defined as built or installed such that it is attached to the ground, floor or wall and is not readily moveable. A free standing stove attached to an exhaust system that is built into or through a wall is considered permanently installed.

What if I need to repair my existing fireplace?

An existing wood-burning fireplace can be repaired or replaced and would not be subject to the Rule 445 requirements for existing developments provided that the repair or replacement occurs within the same footprint as the existing wood-burning fireplace. If a home or chimney inspection documents the need for replacement of an existing wood-







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burning fireplace, however, installation of a gaseous-fueled hearth device is encouraged and may be required by a local government or other regulation.

Can a U.S. EPA Phase 2 <u>Qualified</u> open hearth wood-burning fireplace be installed as a new hearth device in an existing development?

No. The only wood-burning devices allowed to be installed in existing developments are U.S. EPA certified inserts/stoves, pellet heaters and masonry heaters (not open hearth fireplaces). Additional information on the U.S. EPA Phase 2 <u>qualified</u> program is available at http://www.epa.gov/burnwise/fireplaces.html As noted on the U.S. EPA web page:

"The wood-burning appliances that are "qualified" under the EPA's Voluntary Fireplace Programs are not "certified" per EPA's Wood Heater New Source Performance Standard".

Can I install a wood-burning pizza oven or other wood-based cooking device at my home?

Yes, but such devices would be subject to the Mandatory Winter Burning Curtailment provisions. Wood-fired cooking devices designed and used for commercial purposes are exempt from all Rule 445 provisions. Fireplace retrofit kits can also be installed into any fireplace constructed prior to March 9, 2009.

Are there any exemptions to the requirements for existing developments?

There are no retrofit or replacement requirements under Rule 445 when buying or selling a home with an existing wood burning fireplace or stove. Additionally, properties that are registered as a historical site, or are contributing structures located in a Historic Preservation Overlay Zone are exempt from paragraph (d)(2) provisions. Refer to your local city or county agency to determine if your property is within a Historic Protection Overlay Zone.





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Background

People that live and work in the South Coast Air Basin breathe unhealthful amounts of fine particulate matter, also referred to as PM2.5 which stands for "particulate matter less than 2.5 microns in diameter." These particles are so small that the body's natural defense mechanisms can't keep them from entering deep into the lungs where they can harm us by reducing lung function, making bronchitis and other lung conditions worse, and triggering asthma and heart attacks. The State and federal government set health-based air quality standards, which this area does not yet meet. Although not the largest source, wood smoke from fireplaces and wood stoves contributes to the poor air quality in our area.

Answers to frequently asked questions on PM2.5 health effects and AQMD Rule 445 – Wood Burning Devices, are found below. You may also want to review the detailed information that has been prepared to answer to frequently asked questions for local government building officials, home builders, architects, installers or other interested parties.

Health Effects from Wood Smoke

Wood smoke consists of very small particles, generally less than 2.5 microns in diameter (1/30th the diameter of a human hair) that can evade the body's natural defense mechanisms. A study by the California Air Resources Board (CARB) estimated that the elevated ambient 1999-2000 PM2.5 levels from all sources here in the South Coast Air Basin result in 5,400 premature deaths, 140,000 asthma/lower respiratory symptoms and 980,000 lost work days per year. For more information on the health effects from air pollution, refer to Appendix I of the 2007 Air Quality Management Plan (AQMP).

Wood smoke contains a mixture of gases and fine particles that can cause burning eyes, runny nose, and bronchitis. Even limited exposure to smoke can be harmful to human health, particularly to the health of children, the elderly, and those with chronic health conditions. Beside fine particulates, wood smoke also contains carbon monoxide and toxic compounds, such as polycyclic aromatic hydrocarbons





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also known as PAHs. You may also want to visit the following web sites if you are interested in learning more about heath effects from wood smoke:

http://www.epa.gov/woodstoves/healtheffects.html

http://www.ehhi.org/woodsmoke/health effects.shtml

http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1026893

Frequently Asked Questions about AQMD Rule 445 – Wood Burning Devices

1. What action is the District taking to address wood smoke emissions?

The AQMD Governing Board adopted <u>Rule 445 – Wood Burning Devices on March 7, 2008</u> and has also initiated an incentive program to encourage the public to switch to gaseous-fueled hearth products.

2. What does Rule 445 require?

The main elements of the rule are:

- standards for new construction and existing structures;
- no burning of items such as trash in a wood burning device;
- requirements for commercial bulk wood sellers relative to selling unseasoned wood during certain months; and
- a mandatory curtailment element that will be implemented during high pollution days beginning in 2011 during winter months, if any.

The following is a link to the Rule 445 Fact Sheet.

3. What does the incentive program offer?

The AQMD Governing Board has approved the release of a request for proposals to hire one or more contractors to implement a program that would offer the public financial incentives to switch to gaseous-fueled hearth products. Under the





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program, the gaseous-fueled hearth product (i.e., log set, fireplace insert, or stove) would have to be professionally installed in order to receive the financial incentive. Details are still being explored, however, it is anticipated that the financial incentive will be in the \$100 to \$150 range per residence.

For more information you can view the **Program Announcement**:

4. What portions of Southern California are subject to Rule 445?

Rule 445 applies to the South Coast Air Basin portion of the South Coast Air Quality Management District. As shown in the map below, this area is generally defined as all of Orange County and the non-desert portion of Los Angeles, Riverside and San Bernardino Counties. Rule 445 is not applicable in the Coachella Valley. The standards for new construction and the mandatory wood burning curtailment program that will be implemented in 2011 are not applicable to properties 3,000 and more feet in elevation.



You can also view a more detailed map.





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5. What types of hearth products (fireplaces, inserts or stoves) can be built under AQMD Rule 445?

It is important to note that Rule 445 establishes separate standards for new and existing developments. New developments are subject to tighter restrictions while existing developments would have a wider range of options for remodels or room additions. The standards for new developments go into effect on March 9, 2009 and the standards for existing developments become effective September 8, 2008. The following information outlines the standards for new and existing developments.

New Developments (Effective March 9, 2009)

- ✓ Permanently installed indoor and outdoor wood burning devices not allowed in new developments.
- ✓ Open hearth fireplaces with gas logs or other design features that preclude wood burning are allowed.

Exemptions

✓ A wood burning device can be installed in new developments above 3,000 feet in elevation or where there is no natural gas infrastructure within 150 feet of the property line **if** it is a cleaner device as allowed for installation in existing developments under Rule 445.

Existing Developments (Effective September 8, 2008)

- ✓ Permanently installed indoor and outdoor wood burning devices can only be installed in existing homes and businesses if it is one of these cleaner burning options:
 - U.S. EPA Phase II-certified fireplace insert/stove or equivalent device;
 - Pellet-fueled fireplace insert or stove:
 - Masonry heater (not an open hearth fireplace); or
 - dedicated gaseous-fueled fireplace

Exemptions

 Existing properties that are officially registered as a historic site are not subject to this restriction.

Local government building officials, home builders, architects, chimney installers or other interested parties may also want to review the <u>detailed information</u> prepared for them on Rule 445.





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6. How is the sale of firewood in Southern California covered by the Rule?

There are no restrictions on the sale of seasoned firewood (less than 20 percent moisture content) at any time during the year. AQMD Rule 445 does, however, specify that commercial firewood facilities may not sell green firewood (greater than 20 percent moisture content) from July through February. This restriction is only for commercial firewood facilities that have a business license and does not apply to private parties that trim or remove trees and give away or sell small amounts of firewood. Properly seasoned wood is darker, has cracks in the end grain, and sounds hollow when smacked against another piece of wood.

7. Is wood burning going to be banned during the entire winter in Southern California?

No. AQMD Rule 445 includes a mandatory wood burning curtailment program that could be implemented in 2011 during periods of poor air quality in specific areas. A mandatory wood burning curtailment would be issued for specific areas where PM2.5 levels are forecast to exceed the standard (35 µg/m³). The mandatory curtailment program would only be effective during November through the end of February and would be for specific areas. During a mandatory curtailment day, the public will be required to refrain from both indoor and outdoor solid fuel burning in specific areas. Based on historical data, 10 to 25 mandatory curtailment days could be expected in specific areas, however, due to anticipated improvements in air quality, it is expected that there would be fewer curtailment days in the future.





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8. How can I find out if there is a mandatory wood burning curtailment day in my neighborhood?

As mentioned, the earliest time that a mandatory wood burning curtailment day could be implemented in any portion of the South Coast Air Basin is November of 2011. If air quality conditions have not improved sufficiently and a mandatory curtailment program is required, the public will be notified through one or more of the following methods:

- AQMD web site,
- toll free phone number;
- list serve e-mail message, or
- other media outlets.

Additional information will be developed in the future.

9. How can I learn more about air quality conditions?

You can also check <u>current air quality conditions</u> in your neighborhood or by calling 1 (800) CUT-SMOG.

10. How can I reduce emissions from my fireplace to help improve air quality in my neighborhood?

Smoke from neighborhood fireplaces and wood stoves, a common source of both odor and reduced visibility, contributes to the air pollution problems people complain about most. When you include the health-related problems caused by inhaling smoke pollutants, health costs for individuals and the community can be significant. Cleaner alternatives to wood burning include gaseous-fueled or electric devices. If you do decide to burn firewood, follow these simple principles to limit the amount of smoke produced.





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X Never:

burn garbage, plastic, colored paper, treated wood, or wet wood

Always:

- ✓ use seasoned, dry wood that has been split properly. Properly seasoned wood is darker, has cracks in the end grain, and sounds hollow when hit against another piece of wood.
- ✓ Store wood outdoors, off the ground with the top covered.
- ✓ Burn hot, bright fires.
- ✓ Use smaller fires in mild weather.

Additional tips to reduce wood smoke emissions can be obtained from the U.S. EPA or CARB web sites at:

http://www.epa.gov/woodstoves/efficiently.html

http://www.arb.ca.gov/cap/handbooks/wood burning handbook.pdf