San Diego County Air Pollution Control District
Smoke Management Program

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September 2002
Revised November 2002
Applications Revised March 2006

SMOKE MANAGEMENT PROGRAM FOR SAN DIEGO COUNTY
SAN DIEGO AIR POLLUTION CONTROL DISTRICT

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SMOKE MANAGEMENT PROGRAM FOR SAN DIEGO COUNTY
SAN DIEGO AIR POLLUTION CONTROL DISTRICT

I. Introduction

The San Diego County Air Pollution Control District (District) has implemented the following smoke management program to minimize smoke impacts from a projected increase in prescribed burning by land managers in San Diego County. This smoke management program addresses recent revisions to Title 17 of the California Code of Regulations (CCR).

This smoke management program is intended to be a dynamic document, where non-regulatory elements of the smoke management program can change over time, as needed, without having to modify existing District rules. Substantial changes to the smoke management program will need to be approved by the District Board and potentially the California Air Resources Board (ARB) before being implemented by the District.

This document is organized in seven sections, with four appendices. Section II presents the District's determination of permissive-burn and no-burn days. Burning permits and burning reports are presented in Sections III and IV, respectively. The smoke management program goals and requirements are presented in Section V. Special requirements for prescribed burning and prescribed fires in wildland and wildland/urban interface areas are described in Section VI. Section VII lists all references in this document.

Appendix A lists all definitions provided in Title 17. The meteorological criteria used by the District to determine burn/no-burn days are listed in Appendix B. Appendix C shows a sample of the current District Application for a Permit to Burn form, and Appendix D shows the current Application for Prescribed Burning Permit form.

II. Permissive-Burn or No-Burn Days

District meteorologists specify each day of the year as either a permissive burn day or a no-burn day for the San Diego Air Basin (the District does not specify marginal burn days). Agricultural burning, including prescribed burning, is prohibited in San Diego County on no-burn days.

The District informs the ARB about the burn decision no later than 3:00 p.m. every day. If conditions preclude a forecast until the next day, the decision is announced by 7:45 a.m.

The District uses the criteria shown in Appendix B to determine burn/no-burn days. If better science or continued operational experience conclude that the burn day/no-burn day criteria are inadequate to protect public health and welfare, or if there are adverse impacts in smoke sensitive areas, the District will adopt new burn day/no-burn day criteria in consultation with the ARB.

San Diego Air Basin means, for the purpose of burn permit decision-making, all of San Diego County, except for that portion in the Salton Sea Air Basin. Burn decisions for this excepted portion in the Salton Sea Air Basin are specified by the ARB.

The eastern portion of San Diego County is geographically in the Salton Sea Air Basin. For purposes of outdoor burning, those portions of San Diego County included in the Salton Sea Air Basin must abide by the burn day declaration made for the Salton Sea Air Basin. When the ARB declares a Marginal Burn Day in the Salton Sea Air Basin, the District will declare a No Burn Day for that portion of San Diego County included in the Salton Sea Air Basin. This decision is made daily by the ARB and is conveyed to the public through the District's Agricultural Burn forecast system.

The San Diego Air Basin is defined as follows: except that portion which lies east of a line beginning at the U.S.-Mexico border and running north along the range line common to R. 7 E and R. 6 E, San Bernardino Base and Meridian; to the southeast corner of T. 16 S, R. 6 E; then west along the township line common to T. 16 S and T. 17 S to the southwest corner of T. 16 S, R. 6 E; then north along the range line common to R. 6 E and R. 5 E to the southeast corner of T. 14 S, R. 5 E; then west along the township line common to T. 14 S and T. 15 S to the point of intersection with the east boundary of Cuyamaca Park; then north along the east boundary of Cuyamaca Park to the point of intersection with the range line common to R. 5 E and R. 4 E; then north along this range line to the point of intersection with the south boundary of the San Felipe Land Grant; then east and north along the land grant boundary to the easternmost corner; then continuing west and north along the land grant boundary to the point of intersection with the range line common to R. 5 E and R 4 E; then north along this range line to the point of intersection with the township line common to T. 10 S and T. 9 S; then west along this township line to the point of intersection with the range line common to R. 4 E and R. 3 E; then north along this range line to the San Diego-Riverside County boundary.

III. Burning Permits

No person may knowingly set or allow agricultural or prescribed burning unless he/she has a valid permit from the District or designated agency. An example of the District Permit to Burn form is provided in Appendix C.

Permits issued by designated agencies are subject to the District's smoke management program and to all rules and regulations of the District. Designated agencies will submit any information as specified by the District.

Each applicant for a permit will provide information required by the designated agency for fire protection purposes, and any information requested by the District.

A Smoke Management Plan is required for all prescribed burns in San Diego County.

IV. Burning Report

A report of agricultural burning, including prescribed burning, conducted during each calendar year will be submitted to the ARB by the District within 45 days of the end of each calendar year. The report will include the estimated tonnage of each waste type burned. When an electronic reporting system is established by the ARB, it will be used for providing reports of burning.

A report of permits issued pursuant to subdivision (e) of Title 17 CCR section 80120 during each calendar year will be submitted to the ARB by the District within 45 days of the end of the calendar year. The report will include the number of such permits issued, the date of issuance of each permit, the person or persons to whom the permit was issued, an estimate of the amount of waste burned pursuant to the permit, and a summary of the reasons why denial of each permit would have threatened imminent and substantial economic loss, including the nature and dollar amounts of such loss.

V. Program Goals and Requirements

The District's smoke management program includes:

A daily burn decision system that regulates burning in order to minimize smoke impacts on smoke sensitive areas, avoid cumulative smoke impacts, and prevent public nuisance. The District's burn authorization decision system will be based upon the following factors:

(1) Air quality;
(2) Meteorological conditions expected during burning, including wind speeds and directions at the surface and aloft, and atmospheric stability;
(3) Types and amounts of materials to be burned;
(4) Locations of materials to be burned;
(5) Locations of smoke sensitive areas; and
(6) Smoke from all burning activities, including burning in neighboring air districts or regions, which may affect the district or region.

Description of Meteorological and Air Quality Monitoring Data

The District's smoke management program is supported by a large array of air quality and meteorological data collected by the District, the National Weather Service (NWS), the Federal Aviation Administration (FAA), and other organizations on a daily basis. These data are used by the District's meteorologists to evaluate current conditions and make predictions of future weather conditions that affect air pollution and smoke dispersion within the County.

The District operates nine ambient air monitoring stations located in the populated areas of San Diego County (see Figure 1). These sites measure numerous air pollutant and meteorological values, including, but not limited to, continuous measurements of ozone, wind speed and wind direction, and 24-hour integrated particulate samples (PM_{10} and $PM_{2.5}$). Continuous particulate samplers are also operated at some monitoring stations.

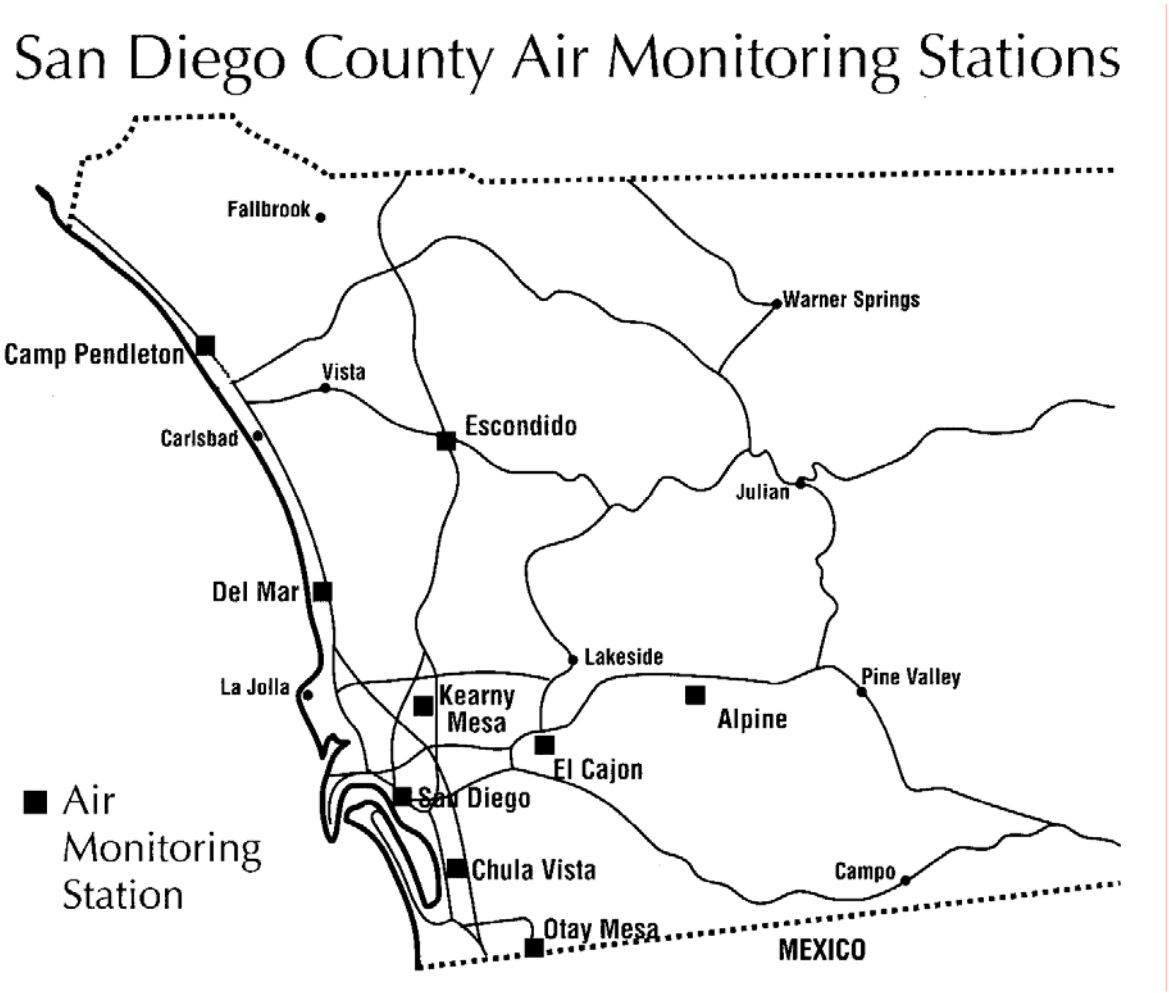

FIGURE 1 Map showing locations of San Diego County Air Pollution Control District air monitoring stations.

District meteorologists produce daily forecasts and reports for ozone concentrations in addition to burn forecasts for the San Diego Air Basin (SDAPCD, 1998). These forecasts are based on air quality conditions in addition to the meteorological conditions described in Appendix B. A no-burn day is called when ozone concentrations are expected to exceed the state air quality standard for ozone (0.09 ppm) in the San Diego Air Basin.

The District also operates two atmospheric radar wind profiler/radio acoustic sounding systems (RWP/RASS), which provide continuous, real-time winds aloft and atmospheric temperature structure information. These profilers are currently located on Point Loma and adjacent to the NWS rawinsonde launch site located on the Miramar Marine Corps Air Station (KNKX). The Point Loma site (32° 41’ 48” N, 117° 15’ 11” W, 35 m MSL) provides meteorological information pertinent to the coastal zone and offshore waters. The Miramar site (32° 50’ 43” N, 117° 07’ 23” W, 126 m MSL) provides meteorological information pertinent for the mesa/inland

valley and foothill zones of the County. This site is also in the center of the more densely populated region of the County.

The NWS launches two rawinsondes daily from the Miramar site (0000Z and 1200Z). The rawinsonde data provide the District meteorologists with wind and temperature information at altitudes higher than can be obtained by the District's radar wind profilers. The rawinsonde data are available to the District meteorologists, as well as the rest of the meteorological community, on a daily basis.

The NWS operates a regional forecast office located in San Diego, which provides additional information to District meteorologists, as needed. The District maintains an excellent professional relationship with the NWS forecast office, and they make frequent use of District meteorological data in making their analyses and forecasts.

A large number of civilian and military airports also provide an excellent source of hourly meteorological observations and long-term climatological data for the San Diego Air Basin.

Civilian airports operated by the FAA in San Diego County include:

McClellan-Palomar (CRQ), located in the north-coastal area.
Gillespie (SEE), located in the south-central inland valley area.
Montgomery (MYF), located in the south-mesa area.
San Diego International-Lindbergh (SAN), located near downtown San Diego.
Brown (SDM), located in the U.S.-Mexico border mesa area.
Ramona (RMN), automated station located in the central foothill area
(FAA-operated control tower planned in the near future).

Military airports in San Diego County include:

MCAS Camp Pendleton/Munn (NFG), located in the north-coastal canyon area.
MCAS Miramar (NKX), located in the south-mesa area.
NAS North Island (NZY), located in Coronado near downtown San Diego.
NOLF Imperial Beach (NRS), located in the U.S.-Mexico border coastal area.

A wide-variety of meteorological sites collect data in San Diego County in addition to the District and airport meteorological sites. These data can be obtained on an as-needed basis to support prescribed burns in otherwise data-sparse regions of the county.

Description of Personnel Resources for Meteorological Support and Burn Coordination

District meteorologists have successfully issued permissive-burn/no-burn decisions for over twenty years and coordinated these decisions with the ARB. This system of District burn decisions and coordination with the ARB and adjacent districts has worked very well over the years without major problems.

The District's Meteorology and Modeling Section (Monitoring and Technical Services Division) provides technical support for air quality and burn forecasting, air quality modeling and data analysis, and ambient monitoring and planning activities. Four permanent, full time meteorologists (one Senior and three Associates) staff this section. These meteorologists provide daily air quality reports and forecasts, burn decisions, and air quality outlooks for external customers (e.g., electric power distributors), including weekends and holidays.

During the first year or two of this smoke management program (depending upon the number of prescribed burns), one or more District meteorologists will witness each medium-sized prescribed burn (100 acres/10 tons particulate matter). The meteorologist(s) will evaluate the adequacy of the burners pre-burn planning and site preparation, and determine the adequacy of the meteorological conditions, predictions, and smoke dispersion characteristics of the fire.

The District also has Air Quality Inspectors (Compliance Division) who investigate air quality and nuisance complaints (including smoke) throughout the County. At least one District Air Quality Inspector will witness each medium-sized burn during the first year or two of this smoke management program (depending upon the number of prescribed burns). Inspectors will concentrate on smoke sensitive areas and ensure compliance with all applicable District rules.

Special attention will be paid to any smoke sensitive areas identified during the planning phase of the project. District staff will work closely with the burners to evaluate the effectiveness of the burn and address any problems encountered. Lessons learned will be applied to all future burns in San Diego County.

During the first two or three years of this smoke management program (depending upon the number of prescribed burns), one or more District meteorologists and one or more District Air Quality Inspectors will witness each large-sized prescribed burn (250 acres). The meteorologist(s) will evaluate the adequacy of the burner's pre-burn planning and site preparation, and determine the adequacy of the meteorological conditions, predictions, and smoke dispersion characteristics of the fire.

Special attention will be paid to any smoke sensitive areas identified during the planning phase of the project. District staff will work closely with the burners to evaluate the effectiveness of the burn and address any problems encountered. Lessons learned will be applied to all future burns in San Diego County.

In subsequent years District meteorologists and Air Quality Inspectors will witness burn projects of special interest. These projects will depend on the number of acres burned, the amount of particulate matter to be released, or upon the geographical location of the project. For all burn

projects, District meteorologists, and/or Air Quality Inspectors will be available to investigate problem burns or complaints.

Procedures for Issuing Notice of Permissive-burn or No-burn Days

District meteorologists issue notices of permissive-burn/no-burn days on a daily basis. The District does not issue marginal burn days for San Diego County. In other words, burning of all types is either permissive or not.

Burn decisions are issued daily by the District and are available to the public by voice recording and on the District website. These media include the ARB's burn decision for the eastern portion of San Diego County (i.e., Salton Sea Air Basin).

The voice recording for burn decisions is available to the public by calling (858) 586-2800, Option 3. The recording is updated daily at 1630 local time.

The burn decision on the District website is located at: http://www.sdapcd.org/air/forecasts/agtoday.html. The website is updated by 1645 local time.

Local fire protection agencies call in to determine the burn status for the following day. When the ARB calls a no-burn for the eastern portion of San Diego County, District meteorologists call the Borrego Springs Fire Department and the Imperial County APCD to inform them of this decision.

The District records additional information for registered prescribed burn projects. This information is available on the District's voice recording system at (858) 586-2800, Option 7, followed by Option 2. Callers to this service have the option of automatic transfer to the District's duty forecaster in the Meteorology and Modeling Section for interactive discussions on their burn project.

Procedures for Issuing Forecasts, Outlooks and Trends for Specific Prescribed Burns

Communications between the District and land managers become more frequent and detailed when a registered burn project is scheduled. One week prior to a prescribed burn, the District consults with the burner to finalize details about the location and timing of the burn. At this time, the District issues a trend analysis, which gives the burner a rough outlook on the probability of conditions being favorable for burning on the desired date.

The trend analysis report is updated four days before the scheduled prescribed burn (i.e., 96-hour trend analysis). Based on the trend analysis the burner can decide to continue to marshal resources or reschedule the burn for a time when conditions will be more appropriate for successful completion of the project. The 96-hour trend analysis report is transmitted to the burner via the District's voice recording system described above (Option 7), although personal contact with the duty forecaster is encouraged.

Three days prior to the planned prescribed burn, the District issues a 72-hour outlook for the planned burn project. This outlook provides the burner with a higher degree of confidence on whether the planned date will be favorable for successful completion of their project. The 72-hour outlook is transmitted to the burner via the District's voice recording system described above (Option 7), although personal contact with the duty forecaster is encouraged.

Two days prior to the planned prescribed burn, the District issues a 48-hour forecast for the planned burn project. This forecast includes a prediction of the meteorological and air quality conditions expected to exist in the project area. The forecast also includes a degree of confidence to assist the burner in scheduling their resources. For example, the 48-hour forecast will include statements such as, "There is an 80% probability that conditions will be favorable for burning on the planned burn date." The 48-hour forecast is transmitted to the burner via the District's voice recording system described above (Option 7), although personal contact with the duty forecaster is encouraged.

Procedures for Authorizing Burning

The day before a planned prescribed burn, the District issues a 24-hour go/no-go decision. The duty forecaster contacts the burner and relays the information directly to the burn boss or other authorized individual. At this time the burner is reminded that all elements of their burn prescription must be met prior to ignition. It is the burners responsibility to ensure that all preignition criteria are met before starting the fire.

Procedures for Acquiring Information on Amounts of Material Burned

For registered burn projects the District requires a daily report of the number of acres burned and an estimation of total emissions. This daily report is required for planned and unplanned wildland fires. Depending upon meteorological and air quality conditions, unplanned wildland fires may preempt planned burns until smoke dispersion conditions improve.

Procedures for Addressing Cross Jurisdictional Smoke Impacts

The District will coordinate all prescribed burns in the San Diego Air Basin with the ARB. This coordination will ensure that the ARB is aware of all burns that have the potential to impact downwind air districts such as the Salton Sea Air Basin (Imperial County). When prescribed burns are near the northern boundaries of the San Diego Air Basin the District will contact the South Coast Air Basin to coordinate the project with any burns planned under its jurisdiction.

Form of Permit(s)

An application for a burn permit is required for all burns conducted in San Diego County. A sample of the San Diego County Application for a Permit to Burn form is included in Appendix C. Applications can be obtained from the local fire protection agency or local fire department.

An approved permit is required for all burns, and no burning is allowed unless the District issues a permissive burn declaration for the Air Basin. The District does not issue marginal burn day declarations.

Procedures for Enforcement

The District's Compliance Division investigates all smoke-related complaints as soon as possible but not later than 24 hours after the complaint has been received. Issuance of public nuisance violations are based on District Rule 51, and the Health and Safety Code-Subsection 41700.

Plans for Analysis and Periodic Assessment

The District's Permit to Burn includes the following conditions to minimize smoke:

> **Conditions to Minimize Smoke**: Material to be burned should be: (a) reasonably free of dirt, soil, and visible surface moisture; (b) arranged to burn with minimum smoke; (c) allowed to dry, as follows – 60 days for trees, large branches, vegetation from forest and brushland management, 30 days for prunings and small branches, 15 days for field crop and other agricultural waste, and 10 days for all other material.

Procedures for Prioritizing Burning

The District recognizes the public benefits of burn projects, including safety, public health, forest health, wildfire prevention, and other ecological needs. Economic concerns are also considered when evaluating the public benefits of burn projects.

The District prioritizes prescribed burn projects at the time of annual registration. Normally, project priority will depend upon the date of project registration, with projects registered earliest getting the highest priority.

The District maintains a map of all registered burn projects, showing the location of the planned burn, as well as the proposed date(s) of ignition. In cases where priorities conflict, the District will fully consider the overall benefits of the projects and prioritize the projects based upon other factors (e.g., nesting periods, fire danger potential, etc.). The District will work with the land managers to reach consensus on the final project prioritization decision.

VI. Special Requirements for Prescribed Burning and Prescribed Fires in Wildland and Wildland/Urban Interface Areas

The anticipated increase in the amount of prescribed burning in the San Diego Air Basin has prompted the development of this smoke management program to minimize smoke impacts and protect public health. The potential for prescribed fires to impact smoke sensitive areas, requires the District to be closely involved with each prescribed burn project. All prescribed burn projects must be registered with the District. Burn project registration is accomplished by submittal of a Smoke Management Plan and observation of the special requirements described in this section.

To register prescribed burn projects, the applicant must complete the Application for Prescribed Burning Permit form included in Appendix D and submit it to the District (application is available on the District website: http://www.sdapcd.org/comply/smoke/SmokeMgt.html). The District will review the application for completeness and to ensure that the applicant has planned to minimize smoke impacts caused by the fire. Once approved by the District, the project is registered into the system for final approval to burn.

The District requires annual registration of all planned burn projects, including areas considered for potential naturally-ignited wildland fires managed for resource benefits, with updates as they occur.

The District requires the submittal of a more detailed smoke management plan for all burn projects greater than 10 acres in size or estimated to produce more than 1 ton of particulate matter. These smoke management plans shall contain, at a minimum, the following information:

(1) Location, type, and amount of material to be burned;
(2) Expected duration of the fire from ignition to extinction;
(3) Identification of responsible personnel, including telephone contacts; and
(4) Identification and location of all smoke sensitive areas.

The District requires that smoke management plans for burn projects greater than 100 acres in size or estimated to produce more than 10 tons of particulate matter contain, at a minimum, the information contained for burns of 10 acres or more and the following additional information:

(1) Identification of meteorological conditions necessary for burning;
(2) The smoke management criteria the land manager or his/her designee will use for making burn ignition decisions;
(3) Projections, including a map, of where the smoke from burns is expected to travel, both day and night;
(4) Specific contingency actions (such as fire suppression or containment) that will be taken if smoke impacts occur or meteorological conditions deviate from those specified in the smoke management plan;

(5) An evaluation of alternatives to burning considered; if an analysis of alternatives has been prepared as part of the environmental documentation required for the burn project pursuant to the National Environmental Policy Act (NEPA) or the California Environmental Quality Act (CEQA), as applicable, the analysis will be attached to the smoke management plan in satisfaction of this requirement; and
(6) Discussion of public notification procedures.

If smoke may impact smoke sensitive areas, the District requires smoke management plans to include appropriate monitoring, which may include visual monitoring, ambient particulate monitoring or other monitoring approved by the District for the following burn projects:

(1) projects greater than 250 acres;
(2) projects that will continue burning or producing smoke overnight;
(3) projects conducted near smoke sensitive areas; or
(4) as otherwise required by the District.

The District requires, as appropriate, daily coordination between the land manager or his/her designee and the District or the ARB for multi-day burns which may impact smoke sensitive areas, to affirm that the burn project remains within the conditions specified in the smoke management plan, and to determine if contingency actions are necessary.

The District requires District review and approval of smoke management plans. The District shall provide notice to the ARB of large or multi-day burns and shall consult with the ARB on procedures for ARB review and approval of large or multi-day burns as specified above.

In the event a natural ignition occurs on a no-burn day, the initial “go/no-go” decision to manage the fire for resource benefit will be a “no-go” unless after consultation with the District, the District decides for smoke management purposes, that the burn can be managed for resource benefit; or for periods of less than 24 hours, a reasonable effort has been made to contact the District, or if the District is unavailable, the ARB; or if after 24 hours, the District has been contacted, or if the District is not available, the ARB has been contacted and concurs that the burn can be managed for resource benefit.

A “no-go” decision does not necessarily mean that the fire must be extinguished, but that the fire cannot be considered a prescribed fire.

The District requires the land manager or his/her designee conducting a prescribed burn to ensure that all conditions and requirements stated in the smoke management plan are met on the day of the burn event and prior to ignition.

The District requires a post-burn smoke management evaluation by the burner for fires greater than 250 acres.

The District requires procedures for public notification and education, including appropriate signage at burn sites, and for reporting public smoke complaints.

The District requires vegetation to be in a condition that will minimize the smoke emitted during combustion when feasible, considering fire safety and other factors.

The District requires that material to be burned be piled where possible, unless ecological goals dictate otherwise.

The District requires piled material to be burned to be prepared so that it will burn with a minimum of smoke.

The District requires the permit applicant to file with the District a statement from the Department of Fish and Game certifying that the burn is desirable and proper if the burn is to be done primarily for improvement of land for wildlife and game habitat. The Department of Fish and Game may specify the amount of brush treatment required, along with any other conditions it deems appropriate.

VII. References

SDAPCD, 1998: San Diego County Air Pollution Control District Air Pollution Forecasting Manual, Prepared by the Meteorology and Modeling Section (Bill Brick, ed.), February 1998.

San Diego County Air Pollution Control District

Smoke Management Program

APPENDIX A

Definitions

San Diego County Air Pollution Control District
Smoke Management Program

APPENDIX A

Definitions

(a) "Air Pollution Control District" (APCD), "Air Quality Management District" (AQMD), "air district," or "district" means an air pollution control district or an air quality management district created or continued in existence pursuant to provisions of Health and Safety Code section 40000, et seq.

(b) "Air Pollution Control Officer (APCO)" means the Air Pollution Control Officer of the San Diego County Air Pollution Control District.

(c) "Air quality" means the characteristics of the ambient air as indicated by state ambient air quality standards which have been adopted by the state board pursuant to section 39606 of the Health and Safety Code and by National Ambient Air Quality Standards which have been established pursuant to sections 108 and 109 of the federal Clean Air Act pertaining to criteria pollutants and section 169A of the federal Clean Air Act pertaining to visibility.

(d) "Ambient air" means that portion of the atmosphere, external to buildings, to which the general public has access.

(e) "ARB" or "state board" means the California Air Resources Board.

(f) "Backfire" means a burn ignition technique where an auxiliary fire is ignited at the downwind side of a burn area and intended to burn into the wind towards the fuel source.

(g) "Burn plan" means an operational plan for managing a specific fire to achieve resource benefits and specific management objectives. The plan includes, at a minimum, the project objectives, contingency responses for when the fire is out of prescription with the smoke management plan, the fire prescription (including smoke management components), and a description of the personnel, organization, and equipment.

(h) "Burn project" means an active or planned prescribed burn or a naturally ignited wildland fire managed for resource benefits.

(i) "Class I Area" means the same as defined in Rule 20.1 of the District's Rules and Regulations.

(j) "Designated agency" means any agency designated by the ARB as having authority to issue agricultural burning, including prescribed burning, permits. The U.S. Department of Agriculture (USDA) Forest Service and the California Department of Forestry and Fire Protection (CDF) are so designated within their respective areas of jurisdiction.

(k) "Eastern Section of the Air Pollution Control District of San Diego County" means the same as defined in Rule 2 of the District's Rules and Regulations.

(l) "Fire hazard reduction burning" means the burning of flammable vegetation that has been removed and cleared away from buildings or structures in compliance with local ordinances to reduce fire hazard pursuant to California Public Resources Code Section 4291.

(m) "Fire protection agency" means any agency with the responsibility and authority to protect people, property, and the environment from fire.

(n) "Forty-eight hour forecast" means a prediction of the meteorological and air quality conditions that are expected to exist for a specific prescribed burn in a specific area 48 hours from the day of the prediction. The prediction will indicate a degree of confidence.

(o) "Land manager" means any federal, state, local, or private entity that administers, directs, oversees, or controls the use of public or private land, including the application of fire to the land.

(p) "National Ambient Air Quality Standards (NAAQS)" means the same as defined in Rule 20.1 of the District's Rules and Regulations

(q) "Ninety-six hour trend" means a prediction of the meteorological and air quality conditions that are expected to exist for a specific prescribed burn in a specific area 96 hours from the day of the prediction.

(r) "No-burn day" means any day on which the district prohibits open burning.

(s) "Particulate matter (PM)" means any airborne finely divided material, except uncombined water, which exists as a solid or liquid at standard conditions (e.g., dust, smoke, mist, fumes or smog).
"PM2.5" means particles with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
"PM10" means particles with an aerodynamic diameter less than or equal to a nominal 10 micrometers (including PM2.5).

(t) "Permissive-burn day," or "burn day" means any day on which the District does not prohibit agricultural burning and prescribed burning.

(u) "Pre-fire fuel treatment" means techniques which can be reasonably employed prior to prescribed burning in order to reduce the emissions that would otherwise be produced in a prescribed fire.

(v) "Prescribed burning" means planned open burning to achieve the specific objectives identified by a land manager on lands selected in advance for removal of:

(i) (i) vegetation from land predominantly covered with chaparral, trees, grass, or standing brush; or

(ii) forest vegetation or debris for the purposes of forest protection; or

(iii) brush, weeds, or vegetation to promote a healthier environment for plant or animal species or to re-establish native plant species; or

(iv) disease and pest prevention.

(w) "Prescribed fire" means any fire ignited by management actions to meet specific objectives, and includes naturally-ignited wildland fires managed for resource benefits.

(x) "Range improvement burning" means the use of open fires to remove vegetation for a wildlife, game, or livestock habitat or for the initial establishment of an agricultural practice on previously uncultivated land.

(y) "Region" means two or more air districts within an air basin or adjoining air basins that sign a memorandum of understanding to implement a coordinated regional smoke management program pursuant to the requirements of Article 2 of this regulation.

(z) "San Diego Air Basin" means, for the purpose of burn permit decision making, all of San Diego County, except for that portion in the Salton Sea Air Basin. Burn decisions for this excepted portion in the Salton Sea Air Basin are specified by the ARB.

The eastern portion of San Diego County is geographically in the Salton Sea Air Basin. For purposes of outdoor burning, those portions of San Diego County included in the Salton Sea Air Basin must abide by the burn day declaration made for the Salton Sea Air Basin. When the ARB declares a Marginal Burn Day in the Salton Sea Air Basin, the District will declare a No Burn Day for that portion of San Diego County included in the Salton Sea Air Basin. This decision is made daily by the ARB and is conveyed to the public through the District's Agricultural Burn forecast system.

The San Diego Air Basin is defined as follows: except that portion which lies east of a line beginning at the U.S.-Mexico border and running north along the range line common to R. 7 E and R. 6 E, San Bernardino Base and Meridian; to the southeast corner of T. 16 S, R. 6 E; then west along the township line common to T. 16 S and T. 17 S to the southwest corner of T. 16 S, R. 6 E; then north along the range line common to R. 6 E and R. 5 E to the southeast corner of T. 14 S, R. 5 E; then west along the township line common to T. 14 S and T. 15 S to the point of intersection with the east boundary of Cuyamaca Park; then north along the east boundary of Cuyamaca Park to the point of intersection with the range line common to R. 5 E and R. 4 E; then north along this range line to the point of

intersection with the south boundary of the San Felipe Land Grant; then east and north along the land grant boundary to the easternmost corner; then continuing west and north along the land grant boundary to the point of intersection with the range line common to R. 5 E and R 4 E; then north along this range line to the point of intersection with the township line common to T. 10 S and T. 9 S; then west along this township line to the point of intersection with the range line common to R. 4 E and R. 3 E; then north along this range line to the San Diego-Riverside County boundary.

(aa) "Seventy-two hour outlook" means a prediction of the meteorological and air quality conditions that are expected to exist for a specific prescribed burn in a specific area 72 hours from the day of the prediction.

(bb) "Smoke Management Plan" means a document prepared for each fire by a land manager that provides the information and procedures required in such plans by Title 17, of the California Code of Regulations Section 80160.

(cc) "Smoke management prescription" means measurable criteria that define conditions under which a prescribed fire may be ignited, guide selection of appropriate management responses, and indicate other required actions. Prescription criteria may include, but are not limited to, minimizing smoke impacts, and safety, economic, public health, environmental, geographic, administrative, social, or legal considerations such as complying with Health and Safety Code section 41700, public nuisance statute.

(dd) "Smoke sensitive areas" means areas where the Air Pollution Control Officer determines that smoke and air pollutants can adversely affect public health or welfare. Such areas can include, but are not limited to, cities, towns, villages, campgrounds, trails, populated recreational areas, hospitals, nursing homes, schools, roads, airports, public events, shopping centers, and mandatory Class I areas.

(ee) "State Ambient Air Quality Standards" means the same as defined in Rule 20.1 of the District's Rules and Regulations.

(ff) "Western Section of the Air Pollution Control District of San Diego County" means the same as defined in Rule 2 of the District's Rules and Regulations.

(gg) "Wildfire" means an unwanted wildland fire.

(hh) "Wildland" means an area where development is generally limited to roads, railroads, power lines, and widely scattered structures. Such land is not cultivated (i.e., the soil is disturbed less frequently than once in ten years), is not fallow, and is not in the United States Department of Agriculture (USDA) Conservation Reserve Program. The land may be neglected altogether or managed for such purposes as wood or forage production, wildlife, recreation, wetlands, or protective plant cover.

For CDF only, "Wildland" as specified in California Public Resources Code Section 4464(a) means any land that is classified as a state responsibility area pursuant to Article 3

(commencing with Section 4125) of Chapter 1, Part 2 of Division 4 of that Code and includes any such land having a plant cover consisting principally of grasses, forbs, or shrubs that are valuable for forage. "Wildland" also means any lands that are contiguous to lands classified as a state responsibility area if wildland fuel accumulation is such that a wildland fire occurring on this land would pose a threat to the adjacent state responsibility area.

(ii) "Wildland fire" means any non-structural fire, other than prescribed fire, that occurs in the wildland.

For CDF only, "wildland fire" as specified in PRC section 4464(c) means any uncontrolled fire burning on wildland.

(jj) "Wildland/urban interface" means the line, area, or zone where structures and other human development meet or intermingle with the wildland.

San Diego County Air Pollution Control District

Smoke Management Program

APPENDIX B

Meteorological Criteria
For Regulating Agricultural and Prescribed Burning
In the San Diego Air Basin

Meteorological Criteria for Regulating Agricultural and Prescribed Burning in the San Diego Air Basin

(a) A permissive-burn day will be declared when the following criteria are met:

(1) Above 3,000 feet msl*:

(A) Near 4:00 a.m., the inversion top is less than 3,000 feet msl or the temperature difference through the inversion is less than seven degrees Fahrenheit; and

(B) The expected daytime resultant wind speed between 3,000 and 6,000 feet msl is at least 5 miles per hour.

(2) Below 3,000 feet msl*:

(A) The maximum mixing depth is expected to be at least 1,500 feet msl; and

(B) The expected daytime resultant wind direction in the marine layer has a westerly component; and

(C) The expected daytime resultant wind speed in the marine layer is at least five miles per hour.

* In place of the standard 3,000 feet msl level, the elevation may be specified in increments of 500 feet on a day-to-day basis as determined from vertical temperature soundings.

San Diego County Air Pollution Control District

Smoke Management Program

APPENDIX C

Sample Application for a Permit to Burn Form

SAMPLE

Fire District Permit Number _____

San Diego County Air Pollution Control District
10124 Old Grove Road, San Diego, CA 92131 • (858) 586-2600

Application for Permit to Burn

ALL APPLICANTS MUST MEET REQUIREMENTS ON REVERSE SIDE

Name _____ Phone ( ) _____

Address _____ City _____

Burning site location _____

Latitude (deg,min,sec) _____ Longitude (deg, min, sec) _____ Elevation (ft above sea level) _____

Section _____ Township _____ Range _____

Dates requested to burn _____

I hereby apply for a Permit to Burn the material indicated below under one of the following exceptions of the Air Pollution Control District's Rules. You must complete and sign the following or your application will not be processed.

Name & type of material _____ Estimated quantity (tons burned) _____ Acreage _____

Check which box applies: ❑ Fire hazard ❑ Fire-fighting training ❑ Aviation fire-fighting training ❑ Agricultural burning
❑ Residential waste burning* (dry, non-glossy paper and cardboard only) ❑ Other _____

**Check with fire agency or Air Pollution Control District for compliance with state Air Toxic Control Measure.*

Prescribed burning: ❑ Range improvement ❑ Forest management ❑ Wildland vegetative management burning
(Prescribed burning requires smoke management plan, registration, and approval by Air Pollution Control District.)

I own or legally control the above described land and agree to comply with all fire agency and Air Pollution Control District laws, ordinances, regulations, and terms of the permit. I understand if burning causes or creates a nuisance, the burn must be abated. I also agree to provide any information requested by the District. I certify that I have read and understand the reverse side of this application.

Signature of applicant _____ Date _____

— — — — — — — — — — — — — — — FOR ADMINISTRATIVE USE — — — — — — — — — — — — — —

APCD: Field inspection made ❑ Yes ❑ No Made by _____ Date _____
Meets requirements for exception ❑ Yes ❑ No Exception ❑ Granted ❑ Denied
Remarks _____

Fire agency: Field inspection made ❑ Yes ❑ No Made by _____ Date _____
Meets requirements for exception ❑ Yes ❑ No Referred to APCD, date _____
Remarks _____

Applicant is hereby authorized to conduct open burning in accordance with the above information and subject to the following:

1. Permit duration (date) _____ through (date) _____
2. Burning to be confined between the hours of ____ ❑ a.m. ❑ p.m. to ____ ❑ a.m. ❑ p.m
3. Other requirements _____
4. Call this number before and after burning _____
5. Emergency telephone _____

Issuing agency _____
Issued by _____
Title _____ Date _____

White	Permittee
Yellow	Issuing Agency
Pink	APCD

APCD Form 14
January 2006

(IMPORTANT: READ CONDITIONS AND REQUIREMENTS ON REVERSE SIDE)

SAMPLE

Attention Permittee

This permit is valid only on those days during which agricultural burning is not prohibited by the California Air Resources Board (ARB) pursuant to Section 41855 the Health and Safety Code and when burning on the lands identified herein is allowed by the San Diego Air Pollution Control District Rules and Regulations and ARB's outdoor residential waste burning Air Toxic Control Measure.

To find out if it's a permissive burn day, call (858) 586-2800 (select option 3).

The practice of open burning is regulated in California for two important reasons: (1) uncontrolled fires are dangerous and expensive, and (2) smoke from fires interferes with the state's concerted effort to reduce air pollution. For these reasons, open burning in San Diego County is largely prohibited and that which is allowed is closely regulated by the Air Pollution Control District and by your local fire agency.

Conditions and Requirements

1. **Burning Date & Time:** Burning is to be done only on those dates and during those hours specified on this permit.
2. **Notification:** You are required as a condition of this permit to contact the fire agency which issued this permit PRIOR to actual ignition and upon completion of the burning.
3. **Temporary Suspension:** You may be advised when you contact the fire agency that ALL permits have been temporarily suspended; any burning during such times will be in direct violation of the law.
4. **Conditions to Reduce Smoke:** Material to be burned should be (a) reasonably free of dirt, soil, and visible surface moisture; (b) arranged to burn with minimum smoke, (c) allowed to dry, as follows – 60 days for trees, large branches, and vegetation from forest and brushland management, 30 days for prunings and small branches, 15 days for field crop and other agricultural wastes, and 10 days for all other material.
5. **Conditions to Minimize Hazard:** Fires should not be set on days of unsafe weather conditions; this includes excessively hot, dry periods when winds are strong enough to keep leaves and small twigs in constant motion or to extend a light flag or cloth. Burning material shall be located in an area cleared of flammable vegetation and be (a) attended by at least one able-bodied adult person at all times; (b) confined within cleared firebreaks or barriers adequate to prevent it from escaping control; and (c) regulated in size at all times to ensure proper control by the number of adult persons attending it.
6. **Nuisance Penalty:** If the burn creates a nuisance, a nuisance violation may be issued by the Air Pollution Control District. The penalty will include the cost of putting out the fire to reimburse the fire agency.

General Information

The conditions and requirements outlined above are for your guidance. **It is your responsibility to be familiar with the exact conditions and requirements that apply to this permit.** This permit does not relieve the permittee from any duty to use reasonable and ordinary care to prevent damage to the property of others or injury or nuisance to persons as prescribed by law. It is a violation of law, and liability is imposed upon anyone who allows a fire to burn uncontrolled upon his lands regardless of what may have caused it. A clean safe environment is everyone's responsibility.

Questions should be directed to your fire agency or the Air Pollution Control District at (858) 586-2650.

San Diego Air Pollution Control District **www.sdapcd.org**

San Diego County Air Pollution Control District

Smoke Management Program

APPENDIX D

SMOKE MANAGEMENT PLAN

Application for Prescribed Burning Permit Form

SAN DIEGO AIR POLLUTION CONTROL DISTRICT

SMOKE MANAGEMENT PLAN
APPLICATION FORM

In accordance with the San Diego Air Pollution Control District's (District) Smoke Management Program, this Smoke Management Plan (SMP) must be completed by the applicant and submitted to the District for all Prescribed Burns in San Diego County. This SMP application consists of a Project Description page and two sections – A and B. **ALL APPLICANTS MUST COMPLETE THE PROJECT DESCRIPTION PAGE (page 1).** Both sections A and B of the SMP are two-page forms **(pages 4 - 7)** that may need to be completed depending on the burn's potential to impact smoke sensitive areas and the size of the burn. This SMP must be approved by the District prior to the Prescribed Burn and must be combined with the District's *Permit To Burn*.

General Information and Requirements regarding this SMP are provided on **page ii**. Terms used in this form have the same meaning as those defined in the District's Rule 101 – Burning Control, or the California Code of Regulations, Title 17, Section 80101. Where differences occur, the District's definitions apply. **Emission Factors** to assist with calculating burn particulate matter emissions are provided on **pages 9 and 10**. Contact the District if you have questions or need assistance with making these calculations (Contact the Meteorology and Modeling Section at 858-586-2769).

The **District Review (page 3)** is for District use only, but must be kept intact with the Project Description section. The **Project Description Page (page 1)** requests general information and identifies conditions for all prescribed burn projects. It identifies the permittee and relevant contact information, who the land owner is, the project name, project location, burn size, purpose of the burn, type of fuel to be burned, and estimated emissions from the burn. It provides a checklist of additional sections of the SMP that may be filled out and attached. Finally, it requests the preparer's signature, the name of the permittee or authorized representative, and the permittee or authorized representative's signature**.**

Section A (page 4), is a two-page form that must be completed and attached to the Project Description page if the burn will be greater than 10 acres or will produce more than one ton of particulate matter (PM10) or has the potential to result in impacts to smoke sensitive areas. Smoke sensitive areas are defined as "populated areas and other areas where the District determines that smoke and air pollutants can adversely affect public health or welfare." Such areas can include, but are not limited to, towns and villages, campgrounds, trails, populated recreational areas, hospitals, nursing homes, schools, roads, airports, public events, shopping centers, and Class I Areas (areas that are mandatory visibility protection areas designated pursuant to section 169A of the federal Clean Air Act). The District can tell you if you are in a Class I Area.

Section B (page 6), is a two-page form that must be completed and attached to the Project Description page if the burn will be greater than 100 acres or will produce more than ten tons of particulate matter (PM10). Section B identifies meteorological conditions necessary for ignition, contingency actions that will be taken if smoke impacts begin to occur from the burn, and information on consideration and use of alternatives to burning. A **Post-Burn Evaluation** form is provided on **page 8.** This form is to be used for burns greater than 250 acres or for burns that result in impacts to smoke sensitive areas. It should be filled out after the burn, as appropriate.

Information may need to be extracted from the project burn plan (if available) to supplement the SMP. District review of the burn plan is for informational purposes only. When the burn plan is reviewed, the District assumes no approval authority or liability for approving the burn plan. The permittee is responsible for assuring firefighter and public safety, which is not the intent of the information included on this form.

General Information and Requirements

SMP Conditions Must Be Met on the Day of the Burn (CCR section 80160(j))

The land manager or his/her designee conducting a prescribed burn is required to ensure that all conditions and requirements stated in the smoke management plan are met on the day of the burn event and prior to ignition. Ignition of a burn project will not occur unless the District has declared a permissive burn day for the day of the burn.

Conditions of Vegetative Material to be Burned (CCR section 80160 (m – p))

Material should be:
- in a condition that will minimize the smoke emitted during combustion when feasible, considering fire safety and other factors
- piled where possible, unless ecological goals dictate otherwise
- prepared so that it will burn with a minimum of smoke

Description of Burn Types

Forest Management Burning is the use of open fires, as part of a forest management practice, to remove forest debris or for forest management practices which include timber operations or forest protection practices.

Range Improvement Burning is the use of outdoor fires to:
- remove vegetation for wildlife or game habitat
- remove vegetation for livestock habitat
- remove vegetation for the initial establishment of an agricultural practice on previously uncultivated land

Wildland Vegetation Management Burning is the use of prescribed burning conducted by a public agency, or through a cooperative agreement with a private manager or contract involving a public agency, to burn land predominantly covered with chaparral (as defined in Title 14, California Code of Regulations, section 1561.1), trees, grass, or standing brush.

Determination of Smoke Sensitive Areas

Smoke sensitive areas are defined as "populated areas and other areas where the District determines that smoke and air pollutants can adversely affect public health or welfare." Such areas can include, but are not limited to, towns and villages, campgrounds, trails, populated recreational areas, hospitals, nursing homes, schools, roads, airports, public events, shopping centers, and Class I Areas (areas that are mandatory visibility protection areas designated pursuant to section 169A of the federal Clean Air Act). The District can tell you if your burn is in a Class I Area. If a burn is near a populated area, has potential for substantial emissions, has a long duration, or has the potential for poor smoke dispersion, a smoke sensitive area could be impacted and Section A of the SMP must be completed. Burners may obtain District assistance in determining if Section A needs to be completed (Meteorology and Modeling Section: 858-586-2769).

Procedures for Permittees to Report Public Smoke Complaints to Air Districts to Address Smoke Management Guidelines Section 80160(l)

1. The permittee shall immediately report any air quality smoke complaints received about this burn project to the District. A phone call to the District during normal business hours (Monday through Friday, 7:00 AM through 5:30 PM) will suffice (858-586-2650). During non-business hours a fax (to the Compliance Division at 858-586-2651) or voicemail message (858-586-2650) will suffice.
2. The complaint report shall include the following: the location of the smoke impact, a short description of the smoke behavior including wind direction and speed, visibility, and public safety impacts if available from the complainant.
3. The permittee shall inform the complainant that he or she may also contact the District directly and shall provide the District telephone number and address. (858-586-2650, San Diego Air Pollution Control District, 10124 Old Grove Road, San Diego, CA 92131-1649).
4. The permittee shall, in coordination with the District, seek resolution for all complaints, as necessary.

Natural Ignition on a No-burn Day (CCR section 80160(h))

When a natural ignition occurs on a no-burn day, the initial "go/no-go" decision to manage the fire for resource benefit will be a "no-go" unless:
1. After consultation with the District, the District decides, for smoke management purposes, that the burn can be managed for resource benefit; or
2. For periods of less than 24 hours, a reasonable effort has been made to contact the District, or if the District is not available, the Air Resources Board (ARB: 916-322-6014); or
3. After 24 hours, the District has been contacted, or if the District is not available, the ARB has been contacted and concurs that the burn can be managed for resource benefit. A "no-go" decision does not necessarily mean that the fire must be extinguished, but that the fire cannot be considered as a prescribed fire.

SMP Project Description
(Complete This Page for ALL PRESCRIBED BURNS)*

1.1 Project Name:	**Project Location: (Report at least latitude and longitude location descriptions. Provide attachment as needed.)**
1.2 Permittee Name: _____ **1.3 Permittee Address:** **Street:** _____ **City:** _____ **State:** _____ **Zip:** _____	**1.8a Legal: T** _____ **R** _____ **S** _____ **M&B** _____ **1.8b Lat/Long: Lat** _____ **(deg.)** _____ **(min)** _____ **(sec)** **Long** _____ **(deg.)** _____ **(min)** _____ **(sec)** **1.8c UTM: Zone:** _____ **N** _____**m, E** _____**m**
1.4 Permittee/Field Contact:	**1.9 Project Elevation (msl feet): Top:** _____ **Bottom:** _____
1.5 24-hour Phone/Pager:	**1.10 Land Owner Name:** _____
1.6 Project Location (Counties):	**Street:** _____
1.7 Nearest Town:	**City:** _____ **State:** _____ **Zip:** _____

1.11 Anticipated Time of Year for Burn (Month/Year): _____

1.12a Is the Primary Purpose of the Burn for Fire Hazard Reduction? _____

1.12b Burn Type (Check one): ☐ Forest Management ☐ Range Improvement ☐ Wildland Vegetation Management ☐ Natural Ignition (see General Information on page ii for description of these burn types)

1.13 For Range Improvement Burns, Check Vegetation Management Objective: ☐ Wildlife or Game Habitat Improvement ☐ Livestock Habitat Improvement ☐ Initial Establishment of an Agricultural Practice on Previously Uncultivated Land

1.14 Vegetation Type (Percentage): _____ Brush _____ Grass _____ Timber Litter _____Timber Slash _____ Other (Describe): _____

1.15 Vegetation Condition: ☐ Machine Pile Burn ☐ Hand Pile Burn ☐ Understory ☐ Landing Pile Burn ☐ Broadcast

1.16 Project Area: _____ (acres) **1.17** Number of Piles: _____ **1.18** Average Pile Size: _____

1.19 Total Project Fuel Loading: _____ (tons vegetation) **1.20** Particulate Matter Emissions: _____ (tons PM10)

(Use Emissions Factors Tables on pages 9-10 for assistance with emissions calculation)

1.21 Emission Factor Table Used or EPA-Approved Calculation Method: _____

1.22 Preferred Ignition Hours for the Fire: _____

1.23 Expected Burn Duration (ignition to complete extinction): Total Time: _____ (hours or days)

1.24 Fuel Drying Time and Conditions prior to ignition: _____

_____

1.25 Limitations on Pile Size, Pile Number, and/or Acreage Limitations to Minimize Smoke (complete as appropriate):

_____

_____

It is the responsibility of the permittee to ensure that conditions of the SMP are met on the day of the burn. The permittee will obtain authorization to burn from the District contact listed below prior to ignition.**

1.26 District Name: San Diego Air Pollution Control District	**1.28 Contact:** Meteorology and Modeling Section
1.27 Address: 10124 Old Grove Road	**1.29 Weekday Telephone:** 858-586-2769
San Diego, CA 92131-1649	**1.30 Fax:** 858-586-2801
	1.31 Email: sdapcdwx@cts.com (initial contacts only)

The permittee will report public smoke complaints to the District per the procedures described in the General Information section of this application.

Check as Applicable:

☐ **This burn could have an impact on smoke sensitive areas – I have filled out and attached all of Section A on pages 4 and 5.**

☐ **This burn is greater than 10 acres (or is estimated to produce greater than 1 ton of particulate matter (PM10)) or could have an impact on smoke sensitive areas and Air District policies require that information on meteorological conditions for ignition and contingency planning be provided – I have filled out and attached line items B.1 and B.2 of Section B on page 6.**

☐ **This burn is greater than 100 acres (or is estimated to produce greater than 10 tons of particulate matter (PM10) – I have filled out and attached all of Section B on pages 6 and 7.**

Preparer's Statement: To the best of my knowledge the information submitted in this application is complete and accurate.

SMP Preparation Date: _____

Preparer's Name (print): _____ Title: _____

Preparer's Phone: (_____) _____

Preparer's Signature: _____

Name of Authorized Representative in Control of the Property (if applicable): _____

Permittee or Authorized Representative Signature: _____

Signature Date: _____

*** If your burn is less than 10 acres with less than one-ton particulate matter emissions, and your burn will not impact any smoke sensitive areas, you may complete only this page. Attach appropriate SMP sections for all other burns.**

**** Burner/District burn authorization coordination to be determined by the District.**

DISTRICT REVIEW
(For District Use Only)

____ I have reviewed and approved this SMP as a conditional burn permit to be combined with agricultural burn/air pollution permit number _____, which expires on _____.

___ This burn project is greater than 250 acres and/or is a multi-day burn which requires ARB consultation prior to final approval pursuant to CCR 80160(g)).
Date ARB Notified: _____ Date ARB approval received: _____

Smoke from this fire is expected to travel into the following non-attainment or maintenance areas:

_____

_____

Name: _____

Signature: _____

Agency: San Diego Air Pollution Control District

Date: _____

SECTION A: AS REQUIRED BY TITLE 17 AND DISTRICT RULES, THIS SECTION APPLIES TO ALL BURN PROJECTS GREATER THAN 10 ACRES OR PRODUCING MORE THAN 1 TON OF PARTICULATE MATTER (PM10) OR WITH BURNS WITH THE POTENTIAL TO IMPACT SMOKE SENSITIVE AREAS (SSAs) *

A.1 Describe locations of SSAs and distances from burn site (miles) – (Also the attached Map# _____ shows SSAs)

_____

_____

_____

A.2 The attached map# _____ provides smoke travel projections for: ☐ Day ☐ Night ☐ Topographical

A.3 Has prescribed burning historically occurred in this area? ☐ Yes ☐ No ☐ Don't Know

A.4 If yes, were there impacts to smoke sensitive areas? ☐ Yes ☐ No ☐ Don't Know

A.5 If yes, please describe impacts: _____

_____

A.6 For burns that will occur past daylight hours and/or for more than one day, provide the District contact information and a description of contact procedures that will be used to affirm that the burn project remains within the conditions specified in this SMP, and/or whether contingency actions are necessary. The permittee will follow any instructions by the District to communicate directly with ARB when necessary (916-322-6014). District contact: Meteorology and Modeling Section (858-586-2769).

A.7 Permittee Contact (or designee): _____

A.7a Telephone: (_____) _____ **A.7b** 24-hour Pager (_____) _____

A.7c Fax: (_____) _____ **A.7d** E-mail: _____

A.8 The permittee will use the frequency and method of contact determined by the District for this burn:

_____

_____

The permittee will monitor the burn project for meteorological conditions and smoke behavior before, during, and after the burn using the following techniques and timing:

A.9 Weather Observation (Wind Direction, Wind Speed, and Temperature):

Method	Location	Beginning	Interval	Ending
☐ Weather Kit				
☐ RAWS				
☐ Aircraft				
☐ Other _____				

(Additional Description of Monitoring Requirements): _____

_____

A.10 Smoke Behavior Observation:

Method	Location	Beginning	Interval	Ending
☐ Visual**				
☐ Test Fire				
☐ Balloon				
☐ Aircraft				
☐ PM Monitoring Inst.				

A.10 Smoke Behavior Observation: continued

Method	Location	Beginning	Interval	Ending
☐ Other				

(Additional Description of Monitoring Requirements): _____

A.11a The permittee shall begin public notification before the day of burning. The notification shall be on-going until the end of burning. Check which of the following procedures will be used to notify and educate the public about this burn project.

☐ Television ☐ Radio ☐ Newspaper ☐ Posters/flyers ☐ Telephone calls ☐ Other (Explain in A.11b below)

A.11b The specifics of the notification procedure(s) checked above are as follows: _____

A.12 The permittee will place appropriate signage at or near burn sites to identify the burn project to the public as noted on the attached map# _____

Adjacent air districts or portions of Mexico that may be potentially impacted by smoke from this burn or which have previously been impacted by smoke from similar burn projects are listed below. The District will be responsible for contacting the agencies listed below.

A.13 Air District Name: _____ **A.14** Contact: _____

A.15 Address: _____

A.16 24-hour Telephone: (_____) _____ **A.17** Fax: (_____) _____

A.18 Air District Name: _____ **A.19** Contact: _____

A.20 Address: _____

A.21 24-hour Telephone: (_____) _____ **A.22** Fax: (_____) _____

A.23 Name of Appropriate Agency in Mexico: _____

A.24 Contact: _____ **A.25** Address: _____

A.26 24-hour Telephone: (_____) _____ **A.27** Fax: (_____) _____

*** See General Information on page ii for determining if your burn has the potential to impact a smoke sensitive area. For Prescribed Burns of more than 10 acres (or 1 ton of PM10) or which can impact SSA's, complete line items B.1 and B.2 of Section B on page 6.**

**** Visual smoke observation refers to observations made through the eyes of designated individuals.**

SECTION B: AS REQUIRED BY TITLE 17 AND DISTRICT RULES, THIS SECTION APPLIES TO ALL BURN PROJECTS GREATER THAN 100 ACRES OR PRODUCING MORE THAN 10 TONS OF PARTICULATE MATTER (PM10)

B.1 Meteorological Conditions for Ignition

Source of Meteorological Information: _____

Surface Wind Direction: Ideal: _____ Acceptable Range: _____ (degrees)

Surface Wind Speed: Ideal: _____ Maximum: _____ Minimum: _____ (mph)

Transport Wind Direction: Ideal: _____ Acceptable Range: _____ (degrees)

Relative Humidity: Ideal: _____ Maximum: _____ Minimum: _____ (%)

Target Mixing Height Parameters: Acceptable Temperature Range: _____ (degrees)

Other Considerations to Assure Acceptable Smoke Dispersion: _____

B.2a Describe contingency actions/methods/procedures permittee will take in the event that serious smoke impacts begin to occur or meteorological conditions deviate from those specified in this SMP (for example: stop ignitions, initiate mop-up, conduct fire suppression – describe in detail):

_____

_____

_____

B.2b Describe any applicable interior unit contingency cutoff lines (refer to map# _____ as appropriate):

_____

_____

_____

B.3 An evaluation of alternatives to burning is described below:

☐ It is a part of the environmental documentation required for the burn project pursuant to the National Environmental Policy Act or the California Environmental Quality Act and is either attached to this SMP, is on file with the District, or is provided for as agreed to by the District.

Document location: _____

☐ Neither a National Environmental Policy Act or the California Environmental Quality Act assessment of alternatives has been performed. Alternatives to reduce fuel load are described in section B.4 – B.9 below.

B.4 Alternatives Considered**:** _____

_____

_____

_____

B.5 Alternatives Rejected and Reasons for Rejection: _____

_____

_____

_____

B.6 Alternatives Used and Tons of Vegetative Material Treated Using Each Alternative:

_____

_____

_____

B.7 Particulate Reduction for Each Alternative Used (tons): _____

_____

_____

B.8 Total Particulate Reductions from Alternatives: _____

B.9 The Following Alternatives to Burning were Considered, But Will Not Be Used:

_____

_____

_____

_____

B.10 If this project is greater than 250 acres or smoke impacts occur, the permittee must provide a completed Post Burn Evaluation Form (see page 8) to the District within 30 days of project completion.

B.11 For burns greater than 250 acres, Sections A.9 and A.10 describe the site monitoring requirements.

Post-Burn Evaluation
For Burns Greater Than 250 Acres
or Burns For Which Complaints or Smoke Impacts Occurred*

Section A. General Information:

Date of Burn: _____ Burn Location: _____

Number of Acres Burned: _____ Estimated Actual PM Emissions: _____ (tons)

Land Manager's Name: _____

Address: _____

_____

Phone Number: _____

E-mail: _____

1. Did the burn remain within the conditions specified in the Smoke Management Plan? ☐ Yes ☐ No
2. Were there any complaints or adverse smoke impacts? ☐ Yes ☐ No If so, proceed to Section B below.
3. Lessons learned (Optional) (Provide attachment if desired): _____

_____

_____

_____

Section B. For Burns That Had Complaints or Smoke Impacts, Complete The Following:

1. Describe adverse smoke impacts below (add attachment if needed):

_____

_____

_____

2. Were there any complaints from the public? ☐ Yes ☐ No If so, how many and from whom (add attachment if needed):

_____

_____

_____

3. What Air Districts were notified (who, when, and at what phone number(s))?

_____

_____

4. Lessons learned (add attachment if needed): _____

_____

5. Attach all smoke observation and weather data collected before, during, and after the burn. See collection methods checked in sections A.9 and A.10 of the burn plan for relevant data.

***As required by Title 17 and District Rule 101.**

Table 1
PM-10 EMISSIONS CALCULATIONS FOR PILES

1. Choose the pile size most representative of the piles on your burn site.
2. Multiply the number of piles in your project with the corresponding "Tons of PM10/Pile" value to get the total PM-10 tonnage.

PM10 EMISSIONS FOR SPECIFIED PILE SIZES		
PILE SIZE (in feet)	**Pile Tonnage**	**TONS OF PM10/PILE**
4' diameter x 3' height	0.056	0.0005
5' diameter x 4' height	0.12	0.001
6' diameter x 5' height	0.21	0.002
8' diameter x 6' height	0.45	0.004
10' diameter x 6' height	0.71	0.007
12' diameter x 8' height	1.3	0.01
15' diameter x 8' height	2.1	0.02
20' diameter x 10' height	4.7	0.04
25' diameter x 10' height	7.4	0.07
50' diameter x 10' height	29	0.3
Pile Tonnage calculated using paraboloid volume formula[a] multiplied by 30 lbs/cu.ft, multiplied by 0.2 packing ratio[b]		
U.S. Forest Service's Conformity Handbook, Table 6 -- PM10 Emissions Factor of 19.0 pounds/ton of fuel burned - average pile and burn slash		
Revised 2/13/2001		

a. Formula used for Paraboloid Volume (cu.ft.) = 3.1416 x [height x (diameter)^2]/8 (see Reference b. below).
b. USDA (2/1996). Forest Service General Technical Report. Report Number: PNW-GTR-364.

Table 2
PM 10 EMISSION CALCULATION FOR BURNING OF MULTIPLE FUEL TYPES[1,2]

Section 80160 (b) of Subchapter 2 Smoke Management Guidelines for Agricultural and Prescribed Burning, Title 17, California Administrative Code states, "requires the submittal of smoke management plans for all burn projects greater than 10 acres in size or estimated to produce more than 1 ton of particulate matter". To determine what the particulate matter (PM 10) amount is of your burn project please use the equation below and review the following examples.

Information needed for PM 10 Calculations:

a. VT = Vegetation type
b. ACRES VT = Estimated number of acres for VT
c. FL est. = Estimated fuel loading in VT TONS per ACRE
d. EV = PM10 emission/ton of fuel

Calculating PM10 Emissions from Prescribed Burning of multiple vegetation types:

PM10 ton(s) emissions per VT = (number of acres VT) (FL tons per acre) (Emission Value (EV)) = _____ ton(s)/VT
PM10 ton(s) emissions per VT = (number of acres VT) (FL tons per acre) (Emission Value (EV)) = _____ ton(s)/VT
Sum Total is the Estimated PM 10 for the project = _____ ton(s)/project

VEGETATION TYPE(S)	**ACRES (VT)**	**x**	**FL est.**	**x**	**EV[1]**	**PM10 EMISSIONS (ton(s))**
Basing Sage/Low Sage	(_____)	x	(_____)	x	(0.010) =	_____
Ceanothus	(_____)	x	(_____)	x	(0.010) =	_____
Chamise	(_____)	x	(_____)	x	(0.009) =	_____
Giant Sequoia	(_____)	x	(_____)	x	(0.007) =	_____
Grass/Forb	(_____)	x	(_____)	x	(0.007) =	_____
Hackberry Oak	(_____)	x	(_____)	x	(0.005) =	_____
Hardwood (Stocked)	(_____)	x	(_____)	x	(0.003) =	_____
Hardwood (Non-stocked)	(_____)	x	(_____)	x	(0.003) =	_____
Jeffrey Pine/Knobcone	(_____)	x	(_____)	x	(0.007) =	_____
Live Oak (Canyon)	(_____)	x	(_____)	x	(0.007) =	_____
Live Oak (Interior)	(_____)	x	(_____)	x	(0.007) =	_____
Lodgepole Pine	(_____)	x	(_____)	x	(0.007) =	_____
Manzanita (Productive Brush)	(_____)	x	(_____)	x	(0.009) =	_____
Mixed Chaparral/Montane	(_____)	x	(_____)	x	(0.008) =	_____
Mixed Conifer	(_____)	x	(_____)	x	(0.006) =	_____
Oak (Black)	(_____)	x	(_____)	x	(0.005) =	_____
Oak (Blue)	(_____)	x	(_____)	x	(0.003) =	_____
Oak (White)	(_____)	x	(_____)	x	(0.003) =	_____
Pinyon Pine	(_____)	x	(_____)	x	(0.007) =	_____
Ponderosa Pine, Gray Pine	(_____)	x	(_____)	x	(0.007) =	_____
Red Fir	(_____)	x	(_____)	x	(0.007) =	_____
Wet Meadow	(_____)	x	(_____)	x	(0.004) =	_____
Willow	(_____)	x	(_____)	x	(0.007) =	_____
Sum Total of the Estimated PM10 for the project in <u>tons/project</u>					**=**	_____

1. See Table 3 on next page for values used to calculate EVs.
2. For vegetation types not listed, contact Air District for assistance with determining appropriate emission factors.

Table 3
EMISSION VALUES (EV) FOR PRESCRIBED BURNS OF VARIOUS VEGETATION TYPES*

Estimated PM10 emission values for various vegetation types = (% combustion) x (PM10 emission lbs/ton) x (1 ton/2000 lbs)*

VEGETATION	%Combustion		PM Emissions (lbs/ton fuel)		Coversion Factor	PM10 EMISSION VALUE (PM10 ton emissions/ton fuel)
Basing Sage/Low Sage	= (1.0)	x	(20.17 lbs/ton)	x	(1 ton/2000 lbs)	= 0.010
Ceanothus	= (1.0)	x	(20.17 lbs/ton)	x	(1 ton/2000 lbs)	= 0.010
Chamise	= (0.9)	x	(20.17 lbs/ton)	x	(1 ton/2000 lbs)	= 0.009
Giant Sequoia	= (0.6)	x	(25 lbs/ton)	x	(1 ton/2000 lbs)	= 0.007
Grass/Forb	= (1.0)	x	(15 lbs/ton)	x	(1 ton/2000 lbs)	= 0.007
Hackberry Oak	= (0.4)	x	(25 lbs/ton)	x	(1 ton/2000 lbs)	= 0.005
Hardwood (Stocked)	= (0.4)	x	(15 lbs/ton)	x	(1 ton/2000 lbs)	= 0.003
Hardwood (Non-stocked)	= (0.4)	x	(15 lbs/ton)	x	(1 ton/2000 lbs)	= 0.003
Jeffrey Pine/Knobcone	= (0.6)	x	(25 lbs/ton)	x	(1 ton/2000 lbs)	= 0.007
Live Oak (Canyon)	= (0.6)	x	(25 lbs/ton)	x	(1 ton/2000 lbs)	= 0.007
Live Oak (Interior)	= (0.6)	x	(25 lbs/ton)	x	(1 ton/2000 lbs)	= 0.007
Lodgepole Pine	= (0.6)	x	(25 lbs/ton)	x	(1 ton/2000 lbs)	= 0.007
Manzanita (Productive Brush)	= (0.9)	x	(20.17 lbs/ton)	x	(1 ton/2000 lbs)	= 0.009
Mixed Chaparral/Montane	= (0.8)	x	(20.17 lbs/ton)	x	(1 ton/2000 lbs)	= 0.008
Mixed Conifer	= (0.6)	x	(20.5 lbs/ton)	x	(1 ton/2000 lbs)	= 0.006
Oak (Black)	= (0.4)	x	(25 lbs/ton)	x	(1 ton/2000 lbs)	= 0.005
Oak (Blue)	= (0.4)	x	(15 lbs/ton)	x	(1 ton/2000 lbs)	= 0.003
Oak (White)	= (0.4)	x	(15 lbs/ton)	x	(1 ton/2000 lbs)	= 0.003
Pinyon Pine	= (0.6)	x	(22 lbs/ton)	x	(1 ton/2000 lbs)	= 0.007
Ponderosa Pine, Gray Pine	= (0.6)	x	(25 lbs/ton)	x	(1 ton/2000 lbs)	= 0.007
Red Fir	= (0.6)	x	(23.1 lbs/ton)	x	(1 ton/2000 lbs)	= 0.007
Wet Meadow	= (0.6)	x	(15 lbs/ton)	x	(1 ton/2000 lbs)	= 0.004
Willow	= (0.6)	x	(25 lbs/ton)	x	(1 ton/2000 lbs)	= 0.007

*** Percent combustion and PM10 emission factors for various fuel types derived from Table 8, Section 6, "Air Quality Conformity Handbook" from the USDA-Forest Service Air Resources / Fire Management Pacific Southwest Region dated November 1995.**

**** These are the vegetation's estimated emissions values (EV) from the vegetation type as determined above to be use when the burn operator provides the vegetation's fuel loading estimate per acre.**

***** For additional information on emissions factors, see EPA document AP-42: "Compilation of Air Pollutant Emission Factors. Volume 1: Stationary Point and Area Sources," Fifth Edition, AP-42, January 1995, U.S. EPA. Table 2.5-5.**