

# Appendix PD-2

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Example Burn Plan/  
Smoke Management Plan

## VTP EIR Burn Plan

### 1.1 Project Identification:

- A. DATE:
- B. PROJECT NUMBER:
- C. PROJECT NAME:
- D. REGION:  
UNIT:  
COUNTY:  
BATTALION:
- E. PROJECT SPECIFICATIONS prepared by:
- F. PROJECT ENVIRONMENTAL CHECKLIST prepared by:
- G. LIST OF PARTICIPATING AGENCIES SIGNATORY TO THE "MULTI AGENCY AGREEMENT FOR COOPERATIVE USE OF PRESCRIBED FIRE":
- H. LIST OF PARTICIPATING AGENCIES NOT SIGNATORY TO "MULTI AGENCY AGREEMENT FOR COOPERATIVE USE OF PRESCRIBED FIRE":
- I. LIST OF PARTICIPATING PROPERTY OWNERS OR CONTROLLERS:

### 1.2 Burn Area Description:

- A. PROJECT LOCATION:
- B. PARCEL ZONING AND LAND USE DESCRIPTION:
- C. PROJECT AREA TOTAL:
- D. PROJECT AREA NET:

### 1.3 Environmental Setting and Impacts:

- A. NARRATIVE DESCRIPTION OF THE PROPOSED PROJECT, OBJECTIVES AND TREATMENT METHODS:
- B. PROJECT TOPOGRAPHY:
- C. SOILS DESCRIPTION AND SENSITIVITY TO PROJECT ACTIVITIES:
- D. VEGETATION COMMUNITY AND DOMINANT SPECIES:
- E. WILDLIFE/FISHERIES HABITAT AND SENSITIVITY TO PROJECT ACTIVITIES:
- F. CULTURAL RESOURCES AND SENSITIVITY TO PROJECT ACTIVITIES:
- G. SMOKE AND COMMUNITY SENSITIVITY TO PROJECT:
- H. IGNITION MAP/ CONTAINMENT MAP

**1.4 Burn Prescription:**

A. SCHEDULE:

B. FUEL DESCRIPTION:

- 1) FUEL MODEL(s):
- 2) VEGETATION LESS THAN 24" TALL:
- 3) VEGETATION GREATER THAN 24 INCHES TALL:
- 4) FUEL LOADING:
- 5) FUEL ARRANGEMENT:
- 6) FUEL CONTINUITY:
- 7) SURFACE FUEL DEPTH:
- 8) DUFF DEPTH:

C. FUEL CONSUMPTION PLANNED:

D. FUEL TREATMENT PLANNED:

E. NARRATIVE:

F. WEATHER AND FUEL MOISTURE:

- 1) WEATHER DATA COLLECTION:
  - a. LOCATION(S) /METHOD(S) OF DATA COLLECTION:
  - b. DATA TO BE COLLECTED:
  - c. SAMPLING PERIOD:
  - d. FORECASTS:
  - e. FORECASTING ENTITY:
  - f. SPECIFICATIONS, WARNINGS:
  - g. PROBABILITY OF ADVERSE WEATHER:
  - h. ADDITIONAL COMMENTS:

2) PRESCRIPTION FOR FUEL MOISTURE, WEATHER, AND SOILS

Provide allowable or acceptable range of values for the following fuel and weather characteristics.

- a. RELATIVE HUMIDITY (%):

- b. AIR TEMPERATURE (DRY BULB °F):
- c. WIND DIRECTION:
- d. WIND SPEED (mph):
- e. FUEL MOISTURE:
- f. SOIL MOISTURE:
- g. DUFF MOISTURE:

**1.5 Fire Behavior Predictions:**

- A. Provide outputs generated by fire behavior calculations (i.e. BEHAVE) using the determined environmental parameters as variables.
  - 1) FIRE LINE INTENSITY (BTUs/foot/second): Target, Maximum.
  - 2) RATE OF SPREAD (chains/hour): Head and Backing.
  - 3) FLAME LENGTH (feet): Target and Maximum.
  - 4) SCORCH HEIGHT: (feet): Target, Maximum.
  - 5) PROBABILITY OF IGNITION: Target, Acceptable.
  - 6) BURNOUT TIME (Hours): Target, Acceptable.
  - 7) OTHER:
  - 8) FIRE BEHAVIOR NARRATIVE:

**Specific Resource Review questions -**

**Water Resources:**

**Will the removal of vegetative cover result in increased water runoff on slopes and subsequent adverse effects on water quality or other resources? \_\_\_\_\_**

MITIGATION(s):

\_\_\_ Geologic hazard areas will not be burned.

OTHER CONDITIONS:

\_\_\_ Physical conditions are such that there will be no increased runoff resulting from the project.

\_\_\_ There is an existing buffer strip of vegetation between the project site and any water course that will prevent degradation of water quality or watershed values.

- \_\_\_ There are no beneficial uses in the vicinity of this project that will be adversely affected by increased runoff.
- \_\_\_ Additional reasons:

**If burning in a perennial watercourse, lake, or reservoir, will the removal of vegetative cover or other phases of the proposed project significantly increase turbidity or deposition of sediment? \_\_\_\_\_**

MITIGATION(S):

A CDFW biologist has been asked to review the project and provided the following comments:

- \_\_\_ CDFW does not anticipate adverse effects to waterbodies as a result of this project as proposed.
- \_\_\_ Recommendations have been incorporated in the project design to prevent adverse impacts to water bodies present in the project area (See below under "Other Conditions").
- \_\_\_ Large areas will not be burned within a short time period, nor will the project be conducted in geologic hazard areas, sandy or shallow soils. High intensity fires will be avoided.
- \_\_\_ Areas where high intensity fire destroys seed stock or adversely alters soil structure will be seeded afterward with herbaceous species.
- \_\_\_ Project design was modified to reduce impact on domestic and instream water resources.
- \_\_\_ Riparian vegetation will not be disturbed.

OTHER CONDITIONS:

- \_\_\_ There is no perennial watercourse, lake, or reservoir in the vicinity of the project.
- \_\_\_ There is an existing buffer strip of vegetation between the project site and any water course that will prevent degradation of water quality or watershed values.
- \_\_\_ CDFW recommendations:
- \_\_\_ Additional reasons:

**If removal of watercourse shading is planned, will this project cause a significant increase in water temperature that is detrimental to fish? \_\_\_\_\_**

MITIGATION(S):

- \_\_\_ Riparian vegetation will be not be disturbed.

\_\_\_ Any vegetation affecting maintenance of stream shade and temperature will not be disturbed.

**OTHER CONDITIONS:**

\_\_\_ There are no watercourses in the vicinity of the project.  
\_\_\_ Additional reasons:

**If using heavy equipment on unstable soils, will this project cause land- slides or slope failure? \_\_\_\_\_**

MITIGATION(S):

\_\_\_ Heavy equipment will not be allowed on current or potential slide areas.

OTHER CONDITIONS:

\_\_\_ There are no known unstable soils in the project area.  
\_\_\_ Additional reasons:

**Will this project cause slash or woody debris to be deposited in a watercourse, lake or reservoir? \_\_\_\_\_**

MITIGATION(S):

\_\_\_ All watercourses and areas below lake transition zone will be kept free of slash and debris. Accidental deposits will be cleaned up. (Needed erosion control structures, such as gully plugs or erosion control devices may be installed to prevent accelerated erosion as needed.)

OTHER CONDITIONS:

\_\_\_ There are no watercourses, lakes or reservoirs in the project area.  
\_\_\_ There is an existing buffer strip of vegetation between the project site and any water course that will prevent degradation of water quality or watershed values.  
\_\_\_ Additional reasons:

**Are there any other circumstances or site conditions present in this project as designed that have not been mitigated to avoid adverse impacts on water quality? \_\_\_\_\_**

MITIGATION:

- \_\_\_ Article 6 of the Program Regulations (Resource Protection Guidelines) will be followed. The site-specific measures to be applied under Article 6 are listed below under "Other Conditions".

OTHER CONDITIONS:

- \_\_\_ Additional reasons:

**Soils and Water Quality:**

**If this project will use a heavy disk, root or brush rake or dozer blade, and/or if this project incorporates low-blade crushing, anchor chaining, or ball-and-chaining of vegetation such as for fuel treatment or control line construction; will this project result in excessive soil disturbance, soil compaction, accelerated erosion or soil deposition in watercourses?**

\_\_\_\_\_

MITIGATION(S):

- \_\_\_ Heavy equipment use will be minimized on slopes over 35%.
- \_\_\_ No heavy equipment, soil, or brush berms will be allowed within 50 feet of a watercourse or lake transition zone.
- \_\_\_ Slopes that present geologic or safety hazards have been identified and will be avoided.
- \_\_\_ These methods of pre-treatment will be used on no more of the project area than is necessary for safety, as determined by the CAL FIRE Regional Chief.
- \_\_\_ Equipment will not be allowed on soils when the moisture content is at/or above field capacity.
- \_\_\_ Brush removed from slopes will be windrowed along the contour and disposed of by burning or by other appropriate methods that leave effective berms of residual soil to impede surface water flow.
- \_\_\_ Buffer strips of vegetation will be left between treated areas and watercourses.
- \_\_\_ Vegetation in natural drainages will be left to trap sediment.
- \_\_\_ These methods will not be used in mid-late spring when the soil erosion potential from spring rains is high and corresponds with ineffectual treatment of young brush stands with a high moisture content.
- \_\_\_ Area will be drill-seeded with herbaceous species on contour in the Fall to reduce surface flow.

OTHER CONDITIONS:

- \_\_\_ Heavy equipment will not be used.
- \_\_\_ There is no watercourse, lake, or reservoir in the vicinity of the project.
- \_\_\_ Additional reasons:

**SOIL STABILITY:**

**Will the project disturb any geologic hazard areas within or adjacent to the project?**

\_\_\_\_\_

MITIGATION:

\_\_\_ Geologic hazard areas are marked and will be avoided.

OTHER CONDITIONS:

\_\_\_ No geologic hazard areas were identified within the project area.  
\_\_\_ Additional reasons:

**Vegetation:**

**If burning large areas of mature chaparral vegetation during winter or spring: will this project cause low regeneration and depletion of available wildlife forage? \_\_\_\_\_**

MITIGATION(S):

- \_\_\_ No more of the project area will be burned than is necessary for fire safety, as determined by the CAL FIRE Regional Chief.
- \_\_\_ Areas of the project have been reserved for summer or fall burning to allow propagation of herbaceous plants.
- \_\_\_ The burn is located on ridge tops and/or canyon bottoms to minimize impacts to wildlife habitat.
- \_\_\_ The project will be burned in a pattern to create and maintain a mosaic of old and young growth with diverse habitat structure.

OTHER CONDITIONS:

\_\_\_ Large areas of mature chaparral will not be burned in winter or spring.  
\_\_\_ Additional reasons:

**If burning dense stands of chaparral occurring upon woodland soils in winter or spring: will this project which could cause significant adverse effects on plant regeneration and loss of wildlife habitat and oak woodlands? \_\_\_\_\_**

MITIGATION:

- \_\_\_ No more of the project area will be burned than is necessary for fire safety, as determined by the CAL FIRE Regional Chief.
- \_\_\_ Landowner to re-seed if regeneration not apparent after burn, or if burn vegetation loss is greater than desired.



- \_\_\_ Trees will be protected through use of a cool prescription and/or clear around trees for protection.

OTHER CONDITIONS:

- \_\_\_ Dense stands of chaparral will not be burned in winter or spring.
- \_\_\_ Additional reasons:

**Will burning in summer or fall cause a significant loss of wildlife habitat and/or damage to oak woodlands?** \_\_\_\_\_

MITIGATION:

- \_\_\_ Area will be re-seeded if regeneration not apparent after burn, or if burn vegetation loss is greater than desired.
- \_\_\_ Trees will be protected through use of a cool prescription and/or clearing around trees for protection.
- \_\_\_ Burn will maintain islands and strips of chaparral to provide thermal protection and escape cover for wildlife.

OTHER CONDITIONS:

- \_\_\_ Dense stands of chaparral will not be burned in summer or fall.
- \_\_\_ The project will incorporate the Department of Fish and Game's recommendation to maintain forty percent cover for wildlife habitat.
- \_\_\_ Additional reasons:

**If burning in areas with oak or conifer overstory: will this project result in undesired adverse effects on conifer and/or oak tree survival?** \_\_\_\_\_

MITIGATION:

- \_\_\_ Conifer and/or oak trees will be protected through use of cooler prescriptions and/or chaparral understory will be cleared away from trunks.

OTHER CONDITIONS:

- \_\_\_ This project does not have a forest overstory.
- \_\_\_ Project will intentionally eliminate existing conifer/oak vegetation as part of a plan to prepare the site for reforestation.
- \_\_\_ Additional reasons:

**Habitat:**

**Will the proposed project result in a reduction in oak trees that could adversely affect wildlife habitat, species diversity, or a cumulative lack of oak regeneration in the area?**

\_\_\_\_\_

MITIGATION:

The project has been reviewed by a biologist from DFG who has determined:

- \_\_\_\_\_ There are no significant undesired effects to oaks or oak-related habitat in the project as proposed.
- \_\_\_\_\_ The project incorporates wildlife/hardwood retention guidelines that maintains habitat diversity (see Other Conditions").
- \_\_\_\_\_ Landowner will protect oak seedlings from livestock grazing while regeneration is occurring.
- \_\_\_\_\_ Landowner will plant oaks when natural regeneration fails.
- \_\_\_\_\_ Landowner will seed with large seed-producing forbs to replace lost forage seed mast.
- \_\_\_\_\_ Fire will be low-intensity and is not expected to harm trees.

OTHER CONDITIONS:

- \_\_\_\_\_ Oaks are not present in the project area.
- \_\_\_\_\_ DFG recommendations:
- \_\_\_\_\_ Additional reasons:

**Wildlife:**

**Will this project result in significant detrimental effects on wildlife habitat by creating a large homogeneous ecotone with no mosaic or strips of unburned vegetation?** \_\_\_\_\_

MITIGATION(S):

- \_\_\_\_\_ The project will be burned in a pattern to create and maintain a mosaic of old and young growth with diverse habitat structure.
- \_\_\_\_\_ The area will be seeded with a variety of forbs to enhance the ground cover and available wildlife forage (include in Cost-Share description).
- \_\_\_\_\_ Spring burning will be avoided because plant species diversity might be adversely affected in such a large burn.
- \_\_\_\_\_ Adjacent areas will be burned only after project site recovers sufficiently to create a pattern of young and old growth with diverse habitat structure.

OTHER CONDITIONS:

- \_\_\_\_\_ Additional reasons:

**Will any rare or endangered plant or animal species be adversely affected by this project?**

\_\_\_\_\_

MITIGATION:

The project has been reviewed by biologists from the Department of Fish and Wildlife and/or federal agency and...

\_\_\_ There are no known rare or endangered plant or animal species in or adjacent to the project area.

\_\_\_ Recommendations have been incorporated into the project design to avoid adverse environmental impacts to wildlife (see "Other Conditions").

OTHER CONDITIONS:

\_\_\_ CDFW/USFWS recommendations:

\_\_\_ Additional reasons:

**Could burning this project as planned cause significant negative impacts to known and occupied habitats of rare, endangered, threatened, or sensitive species? \_\_\_\_\_**

MITIGATION:

Project has been reviewed by biologists from the Department of Fish and Wildlife, U.S. Fish and Wildlife Service, or other federal agency...

\_\_\_ The project area and vicinity is not known or suspected of being used by species of plants or animals so classified.

\_\_\_ Recommendations have been incorporated into the project design to avoid adverse environmental impacts to known or potential wildlife habitat (see "Other Conditions").

OTHER CONDITIONS:

\_\_\_ CDFW/USFWS recommendations:

\_\_\_ Additional reasons:

**Will the proposed project disrupt critical deer migration corridors or critical habitats of any game species? \_\_\_\_\_**

MITIGATION:

A biologist from CDFW has reviewed this project and has concluded that:

- \_\_\_ This project does not contain known deer migration corridors or other critical habitats of any game species.
- \_\_\_ No adverse impacts to critical habitat are anticipated from burning this project as proposed.
- \_\_\_ Recommendations have been incorporated into the project design to avoid damage to habitat (see "Other Conditions")
- \_\_\_ Twenty percent of the area will be replanted with grasses and forbs to restore wildlife habitat.

OTHER CONDITIONS:

- \_\_\_ CDFW recommendations:
- \_\_\_ Additional reasons:

**If burning in or adjacent to areas classified as wetlands or riparian zones: will this project result in undesired changes in vegetation character or other adverse impacts to riparian plants, fish, or wildlife habitat? \_\_\_\_\_**

MITIGATION:

DFG biologists have inspected the area and concluded that:

- \_\_\_ The proposed burn will not cause undesired changes in riparian plants, fish, or wildlife habitat.
- \_\_\_ That by incorporating their recommendations the burn will not adversely affect fish, wildlife, or the vegetation character of riparian or wetland areas (see recommendations under "Other Conditions".)

OTHER CONDITIONS:

- \_\_\_ The project is not in or adjacent to any known wetland or riparian zone.
- \_\_\_ DFG recommendations:
- \_\_\_ Additional reasons:

**Air quality:**

**Will smoke from the project create a significant hazard to human health or safety? \_\_\_\_\_**

MITIGATION:

- \_\_\_ Through coordination with the local Air Pollution Control District (APCD), the project has been rated for air pollution potential, and an appropriate Smoke Management Plan has been prepared that will minimize the air quality impacts of this project (See attached Smoke Management Plan).

OTHER CONDITIONS:

\_\_\_ Additional reasons:

**Archaeology:**

**Will archaeological, cultural, or historical resources be adversely affected by this project?**

\_\_\_\_\_

MITIGATION:

The attached record search by the Regional Officer of the California Archaeological Inventory recommends:

- \_\_\_ a. No site survey was warranted for this project as proposed.
- \_\_\_ b. A site survey was conducted and appropriate measures have been incorporated into the project design to avoid adverse impacts to located sites (see "Other Conditions").
- \_\_\_ Soil will not be disturbed in areas where this would harm the resources.
- \_\_\_ Specific sites will be left unburned if burning would tend to degrade the resources.
- \_\_\_ Crews will be carefully supervised to avoid unauthorized collecting or other disturbance of the site.
- \_\_\_ Areas have been marked to be avoided by machinery, handcrews or fire.

OTHER CONDITIONS:

- \_\_\_ Archaeology mitigation measures:
- \_\_\_ Additional reasons:

**Survey Markers:**

**Are land survey markers vulnerable to damage or destruction during vegetation treatment or burning within the proposed project area?** \_\_\_\_\_

MITIGATION:

- \_\_\_ Survey markers are protected from project impacts by excluding heavy equipment and fire from the vicinity of known markers.

OTHER CONDITIONS:

- \_\_\_ There are no known land survey markers within the project area that would be affected by project activities.
- \_\_\_ Additional reasons:

**Visual:**

**If any part of the proposed project be located upon highly visible slopes; is this project of such a size and design as to cause significant visual distraction and/or loss of aesthetic value? (Include visual impact of pre-treatment effects, such as creation of mechanical or hand-constructed firelines.) \_\_\_\_\_**

MITIGATION:

- \_\_\_ Straight line boundaries and other strong linear configurations will be avoided as much as feasible.
- \_\_\_ Area will not be 100% cleared through burning operations; unburned areas will be left to add textural variety.
- \_\_\_ Natural or existing features will be followed, such as streamcourses, vegetation type lines, ridgetops, etc.
- \_\_\_ Fireline edges on the outside-of-the-burn side will be feathered into the natural landscape, with brush cuttings used to disguise the lines and provide soil cover after the burn.

OTHER CONDITIONS:

- \_\_\_ Project will not be burned upon highly visible slopes and/or visual impact expected to be minimal.
- \_\_\_ Additional reasons:

## SMOKE MANAGEMENT PLAN

In accordance with the a Air District’s Smoke Management Program, this Smoke Management Plan (SMP) or similarly required plan from a specific Air District is to be completed by the applicant and submitted to the appropriate Air District Official as part of the overall burn plan review process. Once approved by the Air District, the SMP serves as a conditional permit to burn, when used in conjunction with a standard permit.

The information required herein is considered the minimum needed to effectively evaluate the effectiveness of smoke management efforts. Individual Air Districts may require supplemental information if the proposed prescribed burn project is:

- 1) Extremely large,
- 2) Likely to adversely impact smoke sensitive areas, such as Class I airsheds,
- 3) Likely to have multi-jurisdictional smoke impacts, or
- 4) Contains other site-specific complexities, which would require the need for further information.

Information may need to be extracted from the project burn plan on an infrequent basis in order to supplement the SMP. Air District review of individual burn plans would be for informational purposes only. The Air District assumes no approval authority or liability for individual, project-specific burn plans. The Permittee is responsible for ensuring firefighter and public safety and all other plan elements, which pertain to matters not related to smoke management.

The terms used in this SMP have the same meaning as those defined in the Air District’s open burning regulations or the California Code of Regulations, Title 17, Section 80101. Where differences occur, the Air District’s definitions apply.

### I. GENERAL INFORMATION

A. 1. PERMITTEE NAME AND ORGANIZATION: \_\_\_\_\_

2. FIRE MANAGER/BURN BOSS NAME: \_\_\_\_\_ PHONE/DISPATCH: \_\_\_\_\_

B. PROJECT NAME: \_\_\_\_\_

C. PERMIT NUMBER: \_\_\_\_\_ D. TOTAL ACRES: \_\_\_\_\_

E. LEGAL LOCATION: TOWNSHIP \_\_\_\_\_ RANGE \_\_\_\_\_ SECTION(S) \_\_\_\_\_

UNIT NAME	LEGAL DESCRIPTION

F. AIR QUALITY MANAGEMENT DISTRICT: \_\_\_\_\_

G. Indicate the category which best describes this prescribed burn project:

- 1.  **Forest Management Burning:** Use of open outdoor fires as a part of forest management practice to remove forest debris or for forest management practices which include timber operations, silvicultural practices or forest protection.

- 2.  **Range Improvement Burning:** Use of open, outdoor fires to remove vegetation for wildlife, game or livestock habitat or for the initial establishment of an agricultural practice on previously uncultivated land.
- 3.  **Wildland Vegetation Management Burning:** 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 predominately covered by chaparral (as defined in The California Code of Regulations Title 14, Section 1561.1), trees, grass, or standing brush.
- 4.  **Wildfire Managed for Resource Benefit:** Use of naturally occurring fire (i.e., lightning) exceeding ten acres in size to achieve resource management objectives. **NOTE:** When a natural ignition fire 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 Air District, the Air District decides, for smoke management purposes, that the fire 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. A SMP must be submitted within 72 hours of project declaration for those fires that are expected to exceed 10 acres in size.

## II. PROJECT INFORMATION

### A. Acres by type of Burn

1) Machine Pile Burn \_\_\_\_\_ 2) Hand Pile Burn \_\_\_\_\_ 3) Landing Pile Burn \_\_\_\_\_  
 4) Broadcast Burn \_\_\_\_\_ 5) Understory Burn \_\_\_\_\_

### B. PREDOMINANT VEGETATION TYPE (check all that apply):

1) Brush \_\_\_\_\_ 2) Grass \_\_\_\_\_ 3) Timber Litter \_\_\_\_\_ 4) Timber Slash \_\_\_\_\_

C. DESIRED SEASON OF PROJECT: \_\_\_\_\_ ACCEPTABLE ALTERNATIVE: \_\_\_\_\_

D. ARB 48/72-HOUR CONTROLLED BURN NOTICE REQUIRED? YES  NO

E. SPOT WEATHER FORECAST REQUIRED? YES  NO

F. PROJECT/UNIT ELEVATION (feet): Top: 800 Bottom: 700

G. DURATION OF BURN: 1) Ignition \_\_\_\_\_ Days 2) Burndown \_\_\_\_\_ Days 3) TOTAL \_\_\_\_\_ Days

H. DRYING TIME REQUIRED FOR HAND AND MACHINE PILES: \_\_\_\_\_

## III. EMISSIONS ESTIMATES

A. TOTAL ESTIMATED PARTICULATE MATTER (PM<sub>10</sub>): \_\_\_\_\_ Tons

## IV. WIND PRESCRIPTION

A. SURFACE WIND SPEED AND DIRECTION <20 FEET: IDEAL \_\_\_\_\_ ACCEPTABLE \_\_\_\_\_ UNACCEPTABLE \_\_\_\_\_

B. WIND DIRECTION ALOFT >20 FEET: IDEAL \_\_\_\_\_ ACCEPTABLE \_\_\_\_\_ UNACCEPTABLE \_\_\_\_\_

C. IDENTIFY POTENTIAL METEOROLOGICAL CONDITIONS THAT WOULD INHIBIT ACCEPTABLE SMOKE DISPERSAL:

\_\_\_\_\_

## V. SMOKE DISPERSAL SURVEILLANCE AND MONITORING



Smoke dispersal surveillance and monitoring will be accomplished by the following methods when indicated. If the project is conducted near smoke sensitive areas or if the smoke from the project may impact smoke sensitive areas, smoke monitoring is required on all projects over 250 acres/day and on those projects that would continue burning or producing smoke overnight. It is recommended that the Burner should obtain a current Smoke Transport and Stability Forecast from the Interagency Fire Forecast Warning Unit (IFFWU). The Internet Web Address is: <http://www.fs.fed.us/r5/fire/north/fwv>. A test burn shall be conducted on a small portion of the project area prior to project implementation. All weather and surveillance records shall be filed in the project folder and be available for Air District Review upon request.

- A. Balloon \_\_\_\_\_ RAWS x \_\_\_\_\_ Aircraft \_\_\_\_\_ Visual Monitoring \_\_\_\_\_  
Weather Forecast \_\_\_\_\_ Hygrothermograph \_\_\_\_\_ Belt Weather Kit \_\_\_\_\_
- B. METHOD/LOCATION OF VISUAL MONITORING: \_\_\_\_\_
- C. INTERVAL BETWEEN DISPERSAL MONITORING OBSERVATIONS: \_\_\_\_\_

### VI. IDENTIFICATION OF SMOKE SENSITIVE AREAS (SSA)

Smoke Sensitive Areas (SSA's) include, but are not limited to the following: Population Centers (towns, villages, home sites, subdivisions), hospitals, schools, daycare centers, nursing homes, shopping centers, populated recreation areas, well-attended public events, major roads, airports, mandatory Class I Airsheds, and may include campgrounds and trails extensively used by recreationalists.

- A. LIKELY TO IMPACT CLASS I AIRSHED? YES  NO
- B. LIKELY TO IMPACT OTHER SMOKE SENSITIVE AREAS? YES  NO
- C. LIKELY TO IMPACT ANOTHER AQMD OR STATE (Oregon or Nevada)? YES  NO
- D. LOCATION OF PROJECT LIES WITHIN MORE THAN ONE AQMD? YES  NO   
If yes, list other AQMD(s): \_\_\_\_\_
- E. PREVIOUS HISTORY OF ADVERSE SSA SMOKE IMPACTS (does NOT imply disapproval of project)? YES  NO   
If yes, list examples \_\_\_\_\_

### VII. MITIGATIONS

Items checked below will be implemented as mitigation measures as part of this SMP.

- A. LIMIT IGNITION TO \_\_\_\_\_ ACRES / PILES per day. (Circle appropriate measure)
- B. NO MORE THAN \_\_\_\_\_ ACRES / PILES SHALL BE BURNED AT ONE TIME. (Circle appropriate measure)
- C. ALLOW \_\_\_\_\_ HOURS BETWEEN IGNITION OF PILES / UNITS. Check here if not applicable
- D. IGNITE BETWEEN \_\_\_\_\_ AND \_\_\_\_\_ HOURS. (Use military time).

### VIII. EVALUATION OF ALTERNATIVES TO BURNING

Projects, which have met applicable National Environmental Policy Act (NEPA) or California Environmental Quality Act (CEQA) requirements, will be considered to have complied with this provision. Either a copy of the applicable environmental document can be attached to this SMP or a sufficiently detailed narrative of how alternatives to burning were carried out in order to reduce fuel loads and emissions.

Alternatives to burning the project could include: (1) mechanical or hand removal of exotic grass plants, (2) herbicide treatment of unwanted species, (3) burning at a different time of year, (4) use of biological controls such as introduction of predatory insects, viruses or ultracompetative plants, or (5) no action.

**IX. CONTINGENCIES**

Actions shall be taken if adverse smoke impacts affect smoke sensitive areas. Adequate resources or assets will be provided for the items checked below.

- A.  HALT IGNITIONS, EXCEPT AS NEEDED TO MAINTAIN CONTROL OF FIRE.
- B.  ALLOW FIRE TO BURN TO CONTINGENCY CONTROL LINES.
- C.  SUPPRESS FIRE.
- D.  BEGIN IMMEDIATE MOP UP.
- E.  BEGIN MOP UP WITHIN \_\_\_\_\_ HOURS OF PROBLEM IDENTIFICATION.
- F.  COMPLETE MOP UP WITHIN \_\_\_\_\_ HOURS OF INITIATION.
- G.  DISCONTINUE MOP UP IF FAVORABLE CONDITIONS RETURN.
- H.  Other (explain): \_\_\_\_\_

**X. Public Notification**

All of the actions checked below will be taken in order to advise the public and known sensitive receptors that prescribed burning will be conducted in their vicinity and to assure the public that measures will be taken to minimize the smoke impacts.

A. Type of Notification	Describe Activity and Timing
<input type="checkbox"/> RADIO.....	_____
<input type="checkbox"/> NEWSPAPER.....	_____
<input type="checkbox"/> TELEVISION .....	_____
<input type="checkbox"/> POSTERS/FLYERS/LETTERS.....	_____
<input type="checkbox"/> PERSONAL CONTACT .....	_____
<input type="checkbox"/> SIGNING at appropriate sites.....	_____
<input type="checkbox"/> OTHER (Explain) .....	_____

- B. If potential impacts were identified in Section VI, additional notifications may be required within the potentially impacted area. If required, describe supplemental notifications that will be undertaken to mitigate adverse impacts: N/A
- C. Notify Unit Emergency Command Center
- D. Notify Northern Region Duty Chief at the Cal-Fire Northern Region HQ for ignition approval
- E. Complete a Go-No-Go checklist to insure the project is in compliance with the prescription

**XI. COMPLAINT PROCEDURES**

Specific information concerning smoke complaints must be given by any complainant. Refusal by the complainant to provide essential information to officials regarding smoke impacts could minimize the urgency of the individual complaint. The person receiving a smoke complaint should make a good faith effort to obtain the following information:

- A. Name, location, phone number, and a short description of the situation, the areas affected by the smoke, whether people are physically suffering from smoke exposure and whether there is a public safety concern due to reduced visibility.
- B. All smoke-related complaints shall be forwarded as soon as possible to the Air District, but no later than 24 hours after the receipt of the complaint.
- C. The Air District will forward to the appropriate Burners any smoke-related complaints, which are received at the Air District Office as soon as possible, but no later than 24 hours after receipt of the complaint.
- D. A log of all complaint calls related to burn projects shall be kept in the project file for a period, of no less than, one year after completion of the specific project.

## **CONTACTING RESPONSIBLE OFFICIALS**

### **DO NOT DISPLAY PERSONAL PHONE NUMBER INFORMATION IN BURN OR SMOKE PLANS**

Make available to the Air District the names of the Prescribed Fire Manager/Burn Boss/Incident Commander and how they can be reached at all times (See General Information Section I.A.2). Include cell phone numbers, pager numbers, dispatch number and any other pertinent contact information. Burners are required to contact the Air District on a daily basis to verify that conditions are still favorable when implementing multi-day projects.

## **XIII. CERTIFICATION**

If the burn project is to be implemented primarily for wildlife and game habitat improvement, the Applicant shall file with the Air District a statement from the California Department of Fish and Wildlife certifying that the burn is desirable and proper. The statement shall also specify if any brush treatment or other desired objective is required by the California Department of Fish and Wildlife.

## **XIV. MAPS**

A map must be attached to this Smoke Management Plan that identifies nearby smoke sensitive areas, burn unit perimeters, available interior control lines (if suitable for this project), and areas subject to smoke inversions due to the burn project. Also, the map must indicate estimated path of unacceptable smoke transport.

## **XV. REPORTS**

For fires greater than 250 acres, a post-burn smoke management evaluation/summary is required to be kept in the project folder. The post burn smoke management evaluation may be subject to review by the Air District.

## **XVI. APPROVALS**

### **A. SMOKE MANAGEMENT PLAN**

Submittal of this Smoke Management Plan (SMP) acknowledges that ignition of this burn project will not occur unless all conditions and requirements as stated in this SMP are met prior to ignition on the day of the burn event, the ARB and the Air District have both declared the day to be a burn day, and the Air District has authorized the burn on the day of the burn.

1. PREPARED BY: \_\_\_\_\_ 2. TITLE: \_\_\_\_\_

3. PREPARER'S ORGANIZATION: \_\_\_\_\_

4. PREPARER'S SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

**B. AIR DISTRICT SMP DECISION**

1. AIR QUALITY MANAGEMENT DISTRICT NAME: \_\_\_\_\_

2. APPROVED AS SUBMITTED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

3. APPROVED WITH CHANGES OR CONDITIONS BY: \_\_\_\_\_ DATE: \_\_\_\_\_

4. ARB NOTIFICATION BY: \_\_\_\_\_ DATE: \_\_\_\_\_

5. DOCUMENT CHANGES OR CONDITIONS: \_\_\_\_\_

6. DISAPPROVED AS SUBMITTED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

For the following Reasons: \_\_\_\_\_

# VTP EIR Prescribed Fire GO-NO GO CHECKLIST

PROJECT NAME \_\_\_\_\_

PROJECT NUMBER \_\_\_\_\_

YES NO PRESCRIBED FIRE GO/NO-GO CHECKLIST

1. Weather Forecast Requirements have been met.

2. Current conditions are within minimum/maximum prescription criteria

TIME \_\_\_\_\_ TEMP \_\_\_\_\_ R.H. \_\_\_\_\_ WIND DIR. \_\_\_\_\_

\_\_\_\_\_ WIND SPEED \_\_\_\_\_ FUEL STICK \_\_\_\_\_ LIVE

FUEL \_\_\_\_\_

3. The fire weather forecast indicates no adverse change expected.

4. Applicable permits have been issued and the project complies with all requirements of the permits.

5. Personnel and equipment required in the IAP are in position.

6. All personnel have been briefed on the IAP

Prescribed Burn Plan

Communications Plan

Safety Plan

7. Backup and support resources are available in strength needed to

contain escapes within the burning period.

8. Notifications have been made

Adjacent Landowners

Unit ECC

Lookouts & Air Attack Bases (summer only)

Region ECC/Duty Chief

A.P.C.D

Other: \_\_\_\_\_

9. If a test burn is not required, go to #10

N/A A test plot has been burned satisfactorily

10. Has any "No" box been checked? If so, do not burn unless approval to modify the plan has been received.

**BEGIN PRESCRIBED FIRE OPERATION!**

11. Can the plan be modified or action taken to rectify the situation?



IF "NO", **DO NOT BURN!**

Describe plan change or action to be taken: \_\_\_\_\_

Obtain approval of: UNIT CHIEF or Unit Duty Chief.

Name \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

Method of contact  Radio  Phone  Personal Contact

**BEGIN PRESCRIBED FIRE OPERATIONS!**

This entire Example Smoke Management Plan has been added to this appendix in response to comments. Its addition is not shown in underline.

## **SMOKE MANAGEMENT PLAN APPLICATION FOR BURN PERMIT**

In accordance with the Air District's Smoke Management Program, this Smoke Management Plan (SMP) serves as a permit application that is to be completed by the applicant and submitted to the Air District officials. This SMP application consists of three sections, a Project Description section, and sections A and B. **ALL APPLICANTS MUST COMPLETE THE PROJECT DESCRIPTION SECTION (pages 4 and 5).** Both sections A and B of the SMP may need to be completed depending on the burn's potential to impact smoke sensitive areas and the size of the burn. Once approved by the Air District, this SMP serves as a conditional permit to burn, when combined with the district's permit to burn.

**General Information and Requirements** regarding this SMP are provided on

**pages 1 and 2.** Terms used in this form have the same meaning as those defined in the Air District's open burning regulation definition or the California Code of Regulations, Title 17, Section 80101. Where differences occur, the Air District's definitions apply. **Emission Factors** to assist with calculating burn particulate matter emissions are provided on **pages 12 and 13.** Contact the Air District if you have questions or need assistance with making these calculations.

The **District Review (page 3)** is for Air District use only, but must be kept in tact with the Project Description section. The **Project Description section (pages 4 and 5)** 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 (pages 6 - 8),** must be completed and attached to the Project Description section if the burn has the potential to result in impacts to smoke sensitive areas. Smoke sensitive areas are defined as "populated areas and other areas where a 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 Air District can tell you if you are in a Class I Area.

**Section B (pages 9 and 10),** is a form that must be completed and attached to the Project Description section if the burn will be greater than 100 acres or will produce more than ten tons of particulate matter. 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 11.** This form is to be used for burns greater than 250 acres or for burns that result in impacts to smoke sensitive areas.

Information may need to be extracted from the project burn plan (if available) to supplement the SMP. Air District review of the burn plan is for informational purposes only. When the burn plan is reviewed, the Air 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 Air District has authorized the burn on 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 good silvicultural practices or ecological goals dictate otherwise; and
- ◆ 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, silvicultural practices, 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; and
- ◆ 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 an Air 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. Your Air 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 should be completed. Burners may obtain Air District assistance in determining if Section A should be completed.

\* CCR 80120(e) provides that an Air District may, by special permit, authorize agricultural burning, including prescribed burning, on days designated by the ARB as no-burn days if the denial of such permit would threaten imminent and substantial economic loss.



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**Procedures for Permittees to Report Public Smoke Complaints to Air Districts to Address Smoke Management Guidelines section 80160(I)**

1. The permittee shall immediately report any air quality smoke complaints received about this burn project to the Air District with jurisdiction over the burn. A phone call to the District during normal seasonal business hours will suffice. During non-business hours a fax or voicemail message 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 name, telephone number and address.
4. The permittee shall, in coordination with the Air 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 your Air District, the Air District decides, for smoke management purposes, that the burn can be managed for resource benefit;
2. For periods of less than 24 hours, a reasonable effort has been made to contact the Air District, or if the Air District is not available, the Air Resources Board (ARB); or
3. After 24 hours, the Air District has been contacted, or if the Air District is not available, 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.

**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 : \_\_\_\_\_

Date: \_\_\_\_\_

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

<b>1.1 Project Name:</b>	<b>Project Location:</b> (Report at least one of the following location descriptions. Provide attachment as needed.) <b>1.8a Legal:</b> T _____ R _____ S _____ M&B _____  <b>1.8b Lat/Long:</b> Lat ____ (deg.) ____ (min) ____ (sec) Long ____ (deg.) ____ (min) ____ (sec)  <b>1.8c UTM: Zone:</b> ____ N _____ m, E _____ m
<b>1.2 Permittee Name:</b>	
<b>1.3 Permittee Address:</b>	
<b>Street:</b>	
<b>City:</b>	
<b>State:</b> _____ <b>Zip:</b> _____	
<b>1.4 Permittee/Field Contact:</b>	
<b>1.5 24-hour Phone/Pager:</b>	<b>1.9 Project Elevation (msl feet):</b> <b>Top:</b> _____ <b>Bottom:</b> _____
<b>1.6 Project Location (Counties):</b>	<b>1.10 Land Owner Name:</b>
<b>1.7 Nearest Town:</b>	Street: _____ 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 1 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 12-13 for assistance with emissions calculation)
- 1.21 Emission Factor Table Used or EPA-Approved Calculation Method:  
\_\_\_\_\_

\* 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.

- 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 Air District contact listed below no more than 24 hours prior to ignition.\*\***

<b>1.26 Air District Name:</b>	<b>1.28 Contact:</b>
<b>1.27 Address:</b>	<b>1.29 24-hour Telephone:</b>
	<b>1.30 Fax:</b>
	<b>1.31 Email:</b>

The permittee will report public smoke complaints to the Air District per the procedures described in the General Information section of this SMP on pages 1 and 2.

**Check as Applicable:**

- This burn could have an impact on smoke sensitive areas – I have filled out and attached all of Section A.
- This burn 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.
- This burn is greater than 100 acres (or is estimated to produce greater than 10 tons of particulate matter) – I have filled out and attached all of Section B.

**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/Title (print): \_\_\_\_\_

Preparer's Phone: (\_\_\_\_) \_\_\_\_\_ - \_\_\_\_\_

Preparer's Signature: \_\_\_\_\_

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

Permittee or Authorized Representative Signature: \_\_\_\_\_

Signature Date: \_\_\_\_\_

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

**SECTION A: AS REQUIRED BY TITLE 17 AND AIR DISTRICT POLICIES, THIS SECTION APPLIES TO ALL 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 considerations.

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, please provide Air 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 Air District to communicate directly with ARB when necessary. Air District 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 described below:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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):

<u>Method</u>	<u>Details</u>
____ Belt Weather Kit	Location _____ Beginning _____ Interval _____ Ending _____
____ RAWS	Location _____ Beginning _____ Interval _____ Ending _____
____ Aircraft	Location _____ Beginning _____ Interval _____ Ending _____
____ Other	Location _____ Beginning _____ Interval _____ Ending _____
____ Additional Requirements:	_____
	_____
	_____

#### A.10 Smoke Behavior Observations:

<u>Method</u>	<u>Details</u>
____ Visual**	Location _____ Beginning _____ Interval _____ Ending _____
____ Test Fire	Location _____ Beginning _____ Interval _____ Ending _____
____ Balloon	Location _____ Beginning _____ Interval _____ Ending _____
____ Aircraft	Location _____ Beginning _____ Interval _____ Ending _____
____ PM Monitoring Inst	Location _____ Beginning _____ Interval _____ Ending _____
____ Additional 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 (Explained 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 and neighboring state Air Districts which may potentially be impacted by smoke travel or which have previously been impacted by smoke from similar burn projects are 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: \_\_\_\_\_.

23 Neighboring State Air District Name: \_\_\_\_\_

A.24 Contact: \_\_\_\_\_

A.25 Address: \_\_\_\_\_

A.26 24-hour \_\_\_\_\_

Telephone: \_\_\_\_\_

A.27 Fax: \_\_\_\_\_

\* See General Information on page 1 for determining if your burn has the potential to impact a smoke sensitive area.

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

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

**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 Air District, or is provided for as agreed to by the Air 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 With Each Alternative:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

B.8 Total Particulate Reductions from Alternatives Used:

\_\_\_\_\_

B.9 If this project is greater than 250 acres or smoke impacts occur, the permittee will provide a completed Post Burn Evaluation Form (see page 11) to the Air District within 30 days of project completion.

B.10 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 Smoke Impacts Occurred\***

**Section A. General Information:**

Date of Burn: \_\_\_\_\_ Burn Location: \_\_\_\_\_  
 Number of Acres Burned: \_\_\_\_\_ Estimated Actual PM Emissions: \_\_\_\_\_ (tons)  
 Burner Name: \_\_\_\_\_  
 Burner Address: \_\_\_\_\_  
 \_\_\_\_\_  
 Burner Phone Number: \_\_\_\_\_  
 Burner Email: \_\_\_\_\_

1. Did the burn remain within the conditions specified in the Smoke Management Plan? \_\_\_\_\_
2. Were there substantial complaints or adverse smoke impacts? \_\_\_\_\_ If so, complete Section B below.
3. Lessons learned (Optional) (Provide attachment if desired):  
 \_\_\_\_\_  
 \_\_\_\_\_

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

1. Describe adverse smoke impacts below (add attachment if needed):  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
2. Were there substantial complaints from the public? \_\_\_\_\_ If so, how many and from whom:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
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 air district policies.**

**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 PM10 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<sup>a</sup> multiplied by 30 lbs/cu.ft, multiplied by 0.2 packing ratio<sup>b</sup>

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)<sup>2</sup>]/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<sup>1,2</sup>**

Section 80160 (b) of Subchapter 2 Smoke Management Guidelines for Agricultural and Prescribe 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 <sup>1</sup>	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) =	_____
<b>Sum Total of the Estimated PM10 for the project in <u>tons/project</u></b>					<b>= _____</b>

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 (EVs) FOR BURNING OF MULTIPLE VEGETATION TYPES\***

Calculation of PM10 emission values = (% combustion) x (PM10 emission lbs/ton) x (1 ton/2000 lbs)\*

VEGETATION	%Combustion	PM Emissions (lbs/ton fuel)	Conversion Factor	PM EMISSION VALUE (PM10 tons 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.