Non-Cereal Crop
BEST MANAGEMENT PRACTICES GUIDANCE

INTRODUCTION:

The purpose of this document is to identify the Best Management Practices (BMPs) for reducing emissions from non-cereal crop agricultural burning. The Agricultural Burning Practices and Research Task Force (Task Force) encourages the use of agronomically sound and economically feasible alternatives to burning that are consistent with resource conservation. The Task Force recognizes that any and all burning creates emissions having the potential of affecting public health and the environment. The Task Force also recognizes that after first considering all non-burning alternatives, there may be specific agronomic situations where burning is reasonably necessary to successfully carry out the enterprise.

DEFINITION of BMP:

A sequence of procedures that apply the best available science and technology in order to address the conservation of natural resources (Soil, Water, Air, Plants, Animals or SWAPA).

HOW TO USE BEST MANAGEMENT PRACTICE GUIDELINES:

The best management practices, or BMPs, are an important piece of the agricultural burning program. The clean air law requires farmers to explain why burning is necessary. This is where best management practices come in. A farmer can show burning is reasonably necessary to successfully carry out the enterprise when it meets the criteria of the BMPs and no practical alternative is reasonably available. While designed as guidance, these best management practices provide one way to explain why burning is reasonably necessary to carry out your enterprise.

Growers using these BMPs to demonstrate the need to burn should expect that applicable portions of this BMP guidance will be included in an approved agricultural burn permit.

Growers not using these BMPs to demonstrate the need to burn must, on a individual basis, establish that their proposed agricultural burn plan is reasonably necessary and that no practical alternative is available. The responsibility and burden of proof is on the grower and the demonstration must satisfy the Department of Ecology and the local delegated permitting authority. Growers should expect that appropriate parts of this demonstration will be included in an approved agricultural burning permit.

The following Best Management Practices guidance is made up of four parts. Part I provides general requirements. Part II provides reasons for which farm burning is generally acceptable. Part III lists recommended ways of burning to keep smoke to a minimum. Part IV is reserved for locally developed BMPs.

Note:	**THESE BMPs ARE NOT FOR CEREAL GRAINS (ex: Wheat, Barley)!** Please see the cereal grain crops BMPs. **THESE BMPs ARE NOT FOR GRASS SEED!** Please see WAC 173-430.

Before getting started- Determine if you need an agricultural burning permit.

- Burning acreage that is in agricultural production requires a permit.
- You do ***not*** need a permit to burn orchard prunings, natural vegetation along fencelines, irrigation and drainage ditches, or natural vegetation blown by the wind.

If you need a permit, follow these 5 steps when using these BMPs:

1. Read all of Part I. *Note: You must consider: economically feasible alternatives to burning, timing for burning, and habitat protection.*

2. Find the Best Management Practice in Part II, Sections 1-8 that most closely matches your situation. *Note: Some sections contain both crop specific and general elements. Use the crop specific portion as the first choice. If your crop is not identified, use the general portions.*

3. Review Part III -- Specific Burning Practices.

4. Fill in the REASON FOR BURNING section on the Agricultural Burning Application. Include the BMP section number and required details. (Examples: REASON FOR BURNING: 3a. control of *Sclerotinia trifoliorum* in alfalfa seed production REASON FOR BURNING: 5k. residue removal & removing apple orchard & replanting to hay REASON FOR BURNING: 7a. renovation of CRP ground suffering a stand failure & CRP management team is (names)

5. If you don't find your situation described in Part II, provide a detailed explanation of why you need to burn with your Agricultural Burning Application. When the extent or severity of the situation falls outside the BMPs or when not utilizing these BMPs, the permitting authority may require the farmer to have the need for burning verified by an appropriate professional.

PART I --- GENERAL BELIEF STATEMENTS:

The Washington Clean Air Act (Chapter 70.94 of the Revised Code of Washington) establishes specific measures for the control of air pollution, which are appropriate for each category of air pollution sources. The legislature recognized that air pollution controls may affect other environmental media and supports those strategies that lessen the negative environmental impact on all environmental media, including air, water, and land. The law also recognizes that agricultural burning is acceptable when it is reasonably necessary to successfully carry out the enterprise.[1]

The 1991 Clean Air Act recognizes air quality as a value no less important than soil, water, animals, plants, and economics and that every action or activity has environmental effects and consequences, including burning. The Task Force recognizes the potential long term adverse impact that excessive burning can have on the environment. Economically feasible alternatives must be considered prior to burning. The development of agronomic and cultural practices and the use of new technology are strongly encouraged.

Agricultural burning has a role in existing and developing farm management systems when a balanced view of values (air, water, soil, plants, animals, economics) is considered. RCW 70.94 identifies best management practices (BMPs) for agricultural burning as those practices that are essential agronomically and which eliminate unnecessary burning. Because of the diversity of farming in Washington, appropriate BMP guidance is needed. This has resulted in "general ag burning" BMPs and crop specific BMPs. The farmer/grower must accept responsibility for characterizing the conditions on their farm which make it necessary to burn.

The nature of agricultural cropping systems in Washington is very diverse. A specific agronomic or cultural practice (including burning practices) may not work the same on all farms (i.e., one size does not fit all).

The *Agricultural Burning Best Management Practices* guidance is ***not*** intended to undo the requirements of fire protection agencies; of local air pollution control authorities; of other federal, state, or local governments; of other resource program requirements; residue requirements; etc.

The farmer must consider the protection of wildlife areas by timing of the burn or other appropriate measures. Generally, wildlife areas may include tree and shrub areas, riparian areas with trees and shrubs, woodlands, and "eyebrows" with dense tree and shrub cover.

A farmer can show burning is reasonably necessary to successfully carry out the enterprise[1] when it meets the criteria of the BMPs, and no practical alternative is reasonably available. When the extent or severity of the situation falls outside the BMPs or when not utilizing these BMPs, the permitting authority may require the farmer to have the need for burning verified by an agronomic professional.

PART II --- SPECIFIC BEST MANAGEMENT PRACTICES

Agricultural burning is generally acceptable when the situation meets one of the following criteria:

SECTION 1 -- FARM PLAN

1. Burning identified as part of a farm management plan that considers all elements of long-term impacts of that burning upon the soil and the total farm environment, and that burning is reasonably necessary to successfully carry out the enterprise in which the applicant is engaged, as prescribed by an accepted/acceptable agronomic professional.

SECTION 2 -- INSECT CONTROL

2. Burning identified for insect control (in affected acreage only) -- Insects/pests for which burning is the control used by or appropriate to farms of a similar nature in the local area. Describe your situation on the permit application including: insect/pest name, crop, local details, severity of problem, etc. Examples may include: saw fly, Hussian fly, mites, thrips, grasshoppers (plague situations).

SECTION 3 -- DISEASE CONTROL

3a. Alfalfa Seed Production --- Agricultural burning in alfalfa seed production (seed for growing alfalfa, not sprouts) is generally acceptable when the situation meets one of the following criteria:

Field scale burning of alfalfa residue during late winter when alfalfa seed will be harvested (for seed, not sprouts) from the field the next season. (The Task Force has established that burning following harvest in the "tear out" year is not generally acceptable practice.) The burning of alfalfa seed fields provides a variety of agronomic benefits, but alfalfa seed farmers primarily burn their fields to control a fungal disease called *Sclerotinia trifoliorum*. This disease affects the alfalfa plant by attacking the alfalfa seed and is virtually uncontrollable by other (non-burning) methods.

A complicating factor in alfalfa seed production is that certain pesticides are used which make the residue uncertifiable as animal feed. (These particular pesticides are used because the alternative pesticides have detrimental effects on the alkali bees, which pollinate the alfalfa.) Because alfalfa seed production is a perennial crop operation, farmers do not plow under their fields every year. The residue left on the fields after harvesting the seed harbors the fungal disease and gets in the way of the next season's plant growth. To have a viable crop, the residue has to be removed. The residue could be baled and hauled away or raked up in some manner, but unfortunately the fungus also remains on the living part of the plant (that portion still in the ground). Burning is the only known way to deal with the specific fungus, and burning gets rid of the residue. Note that the residue is necessary as the fuel for the burning and that without the residue, the field is too green to burn.

3b. Burning identified for disease control (in affected acreage only) -- Diseases for which burning is the control used by or appropriate to farms of a similar nature in the local area. Describe your situation on the permit application including: disease name, crop, local details, severity of problem, etc.

SECTION 4 -- WEED CONTROL

4a. Burning identified for weed control (in affected acreage only) -- Weeds for which burning is the control used by or appropriate to farms of a similar nature in the local area. Describe your situation on the permit application including: weed name, crop, local details, severity of problem, etc. Examples may include: cheat grass, jointed goat grass, diffuse knap weed, russian thistle, kochia, black grass, wind grass, wild oats, volunteer rye, quack grass, Canadian thistle, yellow star thistle.

4b. Burning of noxious weed infested areas in adjacent non-cropland that is not accessible with normal equipment. Describe your situation on the permit application including noxious weed name, crop, local details, severity of problem, etc.

SECTION 5 -- RESIDUE REMOVAL

Note: 5a, 5b, 5c, 5d, 5e, 5f, 5g, and 5h not being used (see Cereal BMPs)

5i. Burning to remove residue for the purposes of developing physiological conditions conducive to increased crop yield. Economics should not be a sole determining factor in documenting the need to burn. Growers are required to use any reasonable non-burning alternative, consistent with SWAPA, instead of burning. Non-burning alternatives are deemed to be reasonably available to a grower when they are successfully and customarily being used by others in circumstances similar to the grower's situation. In cases where a non-burning alternative is reasonably available but not yet used by the grower, burning may be allowed only as part of a limited term transition to non-burning management systems.

Describe your situation on the permit application including: residue amounts, crop, field treatment, local details, etc.

5j. Conservation Reserve Program (CRP) --- Burning of Conservation Reserve Program (CRP) stands for enhancement when residue load is excessive is acceptable when supported by a "CRP Certification Form" recommending burning as an acceptable option. Attach the NRCS "CRP Certification Form" to the completed permit application.

Note: Applications received without the Certification Form will be considered incomplete.

5j.1 Conservation Reserve Program (CRP) --- Crested Wheatgrass – Agriculture burning is not generally recommended in crested wheatgrass CRP take-out with

summer fallow.

5k. Orchard Removal --- Burning residue for the purposes of development of physiological conditions conducive to increased crop yield and/or disease control and under the provisions that the burning identified by the applicant is customary among or appropriate to farms of a similar nature in the local area. Burning of so called "heavy wood" resulting from orchard removal (when changing crops, varieties, or re-establishing the crop).

****Interim Addition to BMP 5k.-- adopted by ABTF on November 20, 2003 for use in counties under Ecology's jurisdiction:*

Orchard tear-out burning will be considered agricultural burning (including within Urban Growth Areas) in all cases except when the future use of the land is known to be non-agricultural. In cases where the future use of the land is unknown, burning under an agricultural burning permit from the Department of Ecology will be allowed. This interim BMP will be in effect until June 1, 2004.

Note: burning of orchard prunings does not require an agricultural burning permit (see page 1).

SECTION 6 – RESEARCH

6. Agricultural burning conducted as part of a research project or demonstration project provided the burning/research/demonstration is recognized by the agricultural community through College, University, Extension, Conservation District, or the Task Force as innovative or experimental and the results will be shared with the Task Force and the general public. Describe your situation on the permit application including: the research project, residue amounts, crop, field treatment, local details, etc.

SECTION 7 – RENOVATION

7a. Conservation Reserve Program (CRP) --- Burning of Conservation Reserve Program (CRP) stands for enhancement is acceptable when one or more of the following conditions exists: (a) residue load (b) rodent infestation (c) weed infestation (d) erosion potential or (e) terrain characteristics; and supported by a "CRP Certification Form" recommending burning as an acceptable option. Attach the NRCS "CRP Certification Form" to the completed permit application.

Note: Applications received without the Certification Form will be considered incomplete.

7b. Periodically burning (every 4 years) for renovation of hayland, pasture, range, or grass cover as recommended by an appropriate technical professional. Describe your situation on the permit application including: crop or field condition, local details, name of technical professional, etc.

SECTION 8 -- SUFFICIENT TIME

8. Burning allowed in order to provide a reasonable time for the applicant to convert to non-burning practices or to allow the Task Force sufficient time to review the procedure for inclusion as a best management practice. The time allowance recommended by the Task Force is not longer than three (3) years . (This provision is being referred to as a "parachute" provision because it allows time for a "safe landing" in situations where burning is not otherwise approved). This does not preclude or waive the requirements outlined above or any other requirements. Describe your situation on the permit application including: crop or field condition, local details, name of technical professional (if any), how much time is needed to shift to alternative, etc.

PART III --- SPECIFIC BURNING PRACTICES:

SECTION A -- REDUCING EMISSIONS

A1. Large Piles --- The Task Force has established the following specific practice or practices in order to reduce emissions from burning[2] large piles: Make very hot fires. Start and/or feed fires only during daylight hours. Allow fires to "ash over" during the evening and night. (Putting out and restarting the fire each evening and morning makes more smoke.)

A2. Other local specific practice or practices in order to reduce emissions from burning. Describe your situation on the permit application including: crop or field condition, local details, name of technical professional (if any), specific way of burning, etc.

SECTION B -- REDUCING IMPACTS

B1. Alfalfa Seed Production --- The Task Force has established the following specific practice or practices in order to reduce the impact of emissions from burning: Burning[2] during the winter under wind conditions which quickly disperse the smoke. Burning during the winter reduces the concentration of smoke in the fall when burning of other crops occurs.

B2. The Task Force has established the following specific practice or practices in order to reduce the impact of emissions from burning[2]: Evening and nighttime burning of piles may be allowed if the typical offshore winds will promote better dispersion than would occur during daytime, onshore conditions.

B3. Other local specific practice or practices in order to reduce the impact of emissions from burning. Describe your situation on the permit application including: crop or field condition, local details, name of technical professional (if any), specific way of burning, etc.

B4. The Task Force has established the following specific practice or practices in order to reduce the impact of emissions from burning[2]: Burning may be allowed

only on designated "burn days" and then only between the hours specified. In order to minimize adverse impacts, your burn must be completed (extinguished) before sunset. In no circumstance is a fire to be ignited less than 2 hours before sunset.

PART IV --- LOCALLY DEVELOPED BMPS

Local permitting authorities may develop BMPs to satisfy particular burning needs in their local, geographic areas. When approved by the Task Force, these BMPs will be made available as an addendum to this document. In the meantime, look closely at the general agriculture portions of Part II --- Specific BMPs (#s: 1, 2, 3b, 4a, 4b, 5i, 6, 8) to see if one might match the local situation. If you don't find your situation described in Part II, please see Step 5 on page 1.

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1. This is the language used in the Washington State Clean Air Act (RCW 70.94.650). The Task Force interprets *successfully carry out the enterprise* as meaning to be successful (profitable) in the business of farming.

2.....provided the burning is reasonably necessary to successfully carry out the enterprise and no practical alternative is reasonably available....