**FARM PRACTICES**

**Description**

This practice includes burning that is done with a stack or chimney as well as open burning.

‘Stack’ Burning

This is burning with control of combustion air and a stack or chimney to vent the emitted products of combustion into the atmosphere. Examples are burning fuel in greenhouses, burning mortalities, etc.

‘Open’ Burning

Open burning is defined as the combustion of material with or without control of combustion air, and without a stack or chimney to vent the emitted products of combustion into the atmosphere. Farmers may use open burning to control crop residues, as a management tool in grass seed production and to control weeds, residue and brush on pasture, range and non-crop areas such as right-of-ways, ditches and dyke banks. They may also burn to dispose of orchard and vineyard prunings and tree stumps, to dispose of brush piles from land, which has been cleared, to dispose of spoiled hay and straw, and to dispose of diseased crop material.

**Regulation of Smoke Pollution - Waste Management Act**

A waste discharge permit under the *Waste Management Act* is not required for

- agricultural burning of crops, weeds, foliage or stubble
- residential (i.e., “backyard”) burning of foliage, weeds, crops or stubble
- burns that satisfy all the terms and conditions set out in the *Open Burning Smoke Control Regulation* and its *Code of Practice*
- burns conducted to comply with the *Weed Control Act*

**Regulation of Fire Safety - Forest Practices Code of B.C. Act**

The *Forest Fire Prevention and Suppression Regulation* regulates open fires within one kilometer of a forest. Eight categories of fires have specific requirements that must be met prior to igniting any fire.

**Local Government Bylaws**

Local fire departments, municipalities, improvement districts or regional districts may have specific bylaws on open burning. Where these are more stringent, they apply over provincial regulations.

**Nuisance Concerns**

The three main disturbances mentioned in the *Farm Practices Protection (Right to Farm) Act* are odour, noise and dust. Of particular concern to open burning practices is dust (smoke).
Dust
Dust (smoke) in the air is defined as fine grained suspended particulate. How people perceive dust (nuisance or not) will depend on the frequency, intensity and duration of the dust generating event. See Nuisance Reference: Dust

Activities and Operations

Grass Seed Residues
Grass seed producers may find it necessary to burn seed crop residue. Farmers in smoke sensitive areas should take steps to minimize smoke production and burn duration.

Crop Residues
In order to replenish nutrients and improve soil fertility and tilth, crop residues should be returned to the soil whenever possible. If, however, crop residues cannot be baled or plowed down, they may be burned. Burn duration and smoke production should be minimized.

It is common practice in many areas to burn plant residues on roadside right-of-ways, along dyke banks, in ditches and pastures. Burning inhibits weeds and plant diseases, reduces insect and rodent habitat, reduces the risk of fire, and makes it easier for new plants to grow.

Fuel Storage
‘Stack’ burning may require fuel. Solid fuel (wood, coal, etc) or liquid fuel (petroleum) may be stored. See Farm Practice: Storage of Hazardous Material

Prunings
Orchard, berry and vineyard prunings are not considered to be agricultural crop residues for burning purposes. Many orchardists use flail mowers to mulch prunings. In some circumstances, it is wiser to burn prunings than to mulch them in order to get rid of diseased plant material.

Spoiled Hay and Straw
Spoiled hay and straw may be returned to the land, composted, sold, or given away.

Disposal of Refuse
The burning of refuse is not exempt from the Waste Management Act unless it meets the requirements of the Open Burning Smoke Control Regulation and its Code of Practice.

Related Farm Practices
Other farm practices that pertain to burning include, but are not limited to, the following:

Mortality Disposal
Mortalities of small livestock or poultry may be incinerated

Land Clearing
Brush piles produced as a result of land clearing may be burned.
Legislation

Information on federal and provincial legislation can be found in Appendices B and C. Acts, regulations and bylaws that regulate or may affect burning practices include, but are not limited to, the following:

Provincial

*Fire Services Act – BC Fire Code Regulation* – sets out requirements of fuel storage tanks

*Forest Act* - is primarily concerned with crown land issues, however, it also covers a number of private land issues.

*Waste Management Act – Open Burning Smoke Control Regulation* and its *Code of Practice* – regulates pollution aspects of open burning

Local Government

Local government may enact *Open Burning Bylaws*, i.e. Greater Vancouver Regional District bylaw #725

Publications

Publications that provide further information on burning include, but are not limited to, the following (refer to Appendix D for details):

*British Columbia Environmental Farm Plan Reference Guide*

*Creston Valley Grain Growers Burn Protocol Agreement*
FARM NUISANCE

Description

Of the three disturbances specifically mentioned in the Farm Practices Protection (Right to Farm) Act, dust is the most obscure. It can be defined by dictionary or reference definitions and it can be measured by specific instrumentation, however, the incidences of dust which are likely to cause a nuisance occur over a longer time frame than noise or odour, so are therefore not as easily captured as a specific concern.

Dust can result of many farm practices and could be a source of complaint concerning farm activities.

The term “dust” is used to describe a range of particles sizes of material which can be transported by air. Dust has strict definition based on particle size, however in many instances when dust particles are transported in the air they are in close association with a wide range of particles including water molecules. At the particle size that is likely to cause pollution, irritation or nuisance, most of these particles (dust, mist, aerosol, or smoke) cannot be differentiated.

The human sensory system can detect some of these particle sizes by sight and others by taste or touch, but it is dusts which obscure visibility and accumulate on surfaces which are considered as a nuisance. There is a fine line in references as to when a dust changes from being a nuisance to being a pollutant.

Dusts are generally characterized using the three basic parameters of detectability, intensity and acceptability.

Detectability

The detectability of an dust is related to its particle size and concentration. As a general rule dust is particulate matter which is suspendible in air and 90% of which is capable of passing a 44 µm screen.

Dust particles have an aerodynamic diameters in the range of 0.05 to 50 µm. The other particulate matter fractions which in most cases cannot be differentiated from dust include mists, aerosols and smoke.

Mists: means cloud-like aggregation of liquid droplets having a diameter of <100 µm which are temporarily suspended in air. Aerosols: means small droplets of a liquid or particles of solid matter suspended in air that are fine enough in particle size, 0.01 - 100 µm, to remain dispersed for a period of time. Smoke: means the gases, particulate matter and products of combustion emitted into the atmosphere when debris is open burned or as borne particulate matter in a sufficient amount to be observable. By combining all of these particle sizes together we can refer to dust as particulate matter.

So then Particulate matter: is any material, except uncombined water, which exists in a finely divided form as a liquid or solid at standard conditions. It is only when the size of the particles reaches a level which is detectable by the human sensory system or when the concentration of these particles reaches a point at which they can be detected that they should begin to be perceived as a nuisance.
Intensity
The intensity of a given dust occurrence is defined by its ability to interfere with visibility or its collection on surfaces over an short time frame. For example, a low concentration of dust occurring over a long time frame may not be perceived as a nuisance if it does not accumulate on surfaces which are used by neighbours. However, if the low concentration does accumulate on visible surfaces it could become a nuisance. If the accumulation begins to interfere with the normal conduct of a business it would then be considered to be an air contaminant.

The other aspect of intensity is the short duration, high concentration events which are visible and result in views being obscured. If these events result in visibility being obscured to the point of interfering with normal activities of business or a person they would be considered to be an air contaminant.

Acceptability
The acceptability of a dust will vary with individuals, and is likely to vary based on previous experience as well as the character of the dust and the frequency, duration, and intensity of the occurrence. Environmental conditions of wind speed and temperature will influence the dust occurrence and ultimately the sensory perception of dusts.

Measurement
The basic measurement parameter used to measure particulate matter or dust in the air is the term opacity. Opacity is the degree to which a quality or state of a body reduces the passage of light or obscures the view of a background object. It is expressed numerically from 0 percent (transparent) to 100 percent (opaque). This is usually measured by changes in light intensity of a beam of light across a known distance.

A secondary measure of dust is visibility. Visibility is the maximum distance at which the human eye is able to distinguish an object against its background. The ability to see an object (particle) depends on the contrast or brightness difference between the object and the background. Contrast \( (C) = \frac{(B_h - B_o)}{B_h} \) where \( B_h \) and \( B_o \) stand for the brightness of the background and the object respectively. An observer can make out an object if the contrast against the background is greater than the eye's brightness contrast threshold. That threshold is generally held to have a value of 0.02, which means that the brightness difference has to be at least 2% for the eye to be able to distinguish an object.

Activities to Reduce Complaints
Reducing dust complaints is achieved by keeping the offending dust from reaching the complainant. Some strategies to achieve this are as follows:

- Avoid climatic conditions, when carrying out farm operations, which are conducive to the generation of dust.
- Avoid cultivation in situations where the soil will become excessively dry.
- Choose irrigation equipment which increases droplet size.
- Choose manure application methods which place manure on the soil surface rather than in the air.
- Choose cropping, crop residue and cover crop management practices which hold soil in place.
- Design fans, fan shrouds, chimneys and other ventilation structures to deliver emissions either to the ground or to the air in such a fashion as not to create drift of emission off the property.
- Chose spray equipment which places product on the target rather than into the air where it is subject to drift.
• Avoid burning or burn only under ideal ventilation condition or under ventilation conditions defined in regional by-laws.
• Develop wind screens, breaks or strategies to reduce dust movement off the property.

Legislation
With respect to dust, under the Farm Practices Protection (Right to Farm) Act, a farmer is not liable in nuisance to any person for any dust resulting from the farm operation if:
• The farm operation is conducted in accordance with normal farm practices, and
• The farm operation is not conducted in contravention to the Waste Management Act.

Waste Management Act
Under the Waste Management Act, the release of “air contaminants” from activities or facilities that cause pollution are prohibited. However, there is provision within the Act to allow for
1. the discharge into the air of an air contaminant from an incinerator operated under authority, licence or permit of a municipality,
2. the discharge of air contaminants authorized by a bylaw made under section 24 (3) (d),
3. the burning of leaves, foliage, weeds, crops or stubble for domestic or agricultural purposes or in compliance with the Weed Control Act;
4. the use of pesticides or biocides for agricultural, domestic or forestry purposes in compliance with the Pesticide Control Act, the Pest Control Products Act (Canada) and any other Act and regulation governing their use
5. fires set or controlled by a person
   (i) acting under an order of a local assistant, as defined in the Fire Services Act, if the local assistant orders the fire for training purposes, or
   (ii) carrying out
      (A) fire control and suppression operations under section 89 of the Forest Practices Code of British Columbia Act, or
      (B) a resource management open fire, as that term is defined in the Forest Fire Prevention and Suppression Regulation, B.C. Reg. 169/95, if the person carries out the fire in accordance with the Forest Practices Code of British Columbia Act and the regulations made under that Act
6. emissions from steam powered or internal combustion engines in compliance, if applicable, with the Motor Vehicle Act and regulations,
7. emission into the air of soil particles or grit in the course of agriculture or horticulture
8. emission of an air contaminant from combustion of wood or fossil fuels used solely for the purpose of comfort heating of domestic, institutional or commercial buildings,
9. emission of an air contaminant from food preparation in
   (i) residential premises, or
   (ii) retail food outlets.

Note within the GVRD the Waste Management Act – air emissions requirements are administered by the GVRD through the Air Quality Management Bylaw No.937, 1999 and Air Pollution Control Bylaw No. 603.

The question then is, when do dusts cause pollution?
Air pollution means the presence in the air of any substance (including any dusts) that causes or is capable of causing material physical discomfort to a person, or substantially alters or impairs the usefulness of the air. In the case of the Act dust is included as an Air Contaminant.

*Air Contaminant:* means any substance that is emitted into the *Air* and that:

(a) injures or is capable of injuring the health or safety of a person,
(b) injures or is capable of injuring property or any life form,
(c) interferes or is capable of interfering with visibility,
(d) interferes or is capable of interfering with the normal conduct of business,
(e) causes or is capable of causing material physical discomfort to a person, or
(f) damages or is capable of damaging the environment.

(GVRD Bylaw 937 and *Waste Management Act*)

*Air:* means the atmosphere but does not include the atmosphere inside a man made enclosure that is not open to the weather. (GVRD Bylaw 603)

*Pollution:* means the presence of Air Contaminants or substances that substantially alter or impair the usefulness of the AIR. (GVRD Bylaw 603)

**References**


WCB Industrial Health and Safety Regulations - definitions
