

Community Action On Air Quality

Background Materials for
Community Involvement In
Air Quality Monitoring And Enforcement

By Cindy Chiasson

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Environmental Law Centre (Alberta) Society
204, 10709 Jasper Avenue
Edmonton, Alberta T5J 3N3

About the **Environmental Law Centre**

The Environmental Law Centre (Alberta) Society is a non-profit charitable organization that has been operating in Alberta since 1982. The Society believes in making the law work to protect the environment and, in support of this objective, provides services in environmental law education and assistance, environmental law reform and environmental law research. The Society operates the Environmental Law Centre, which is staffed by four full-time lawyers, a librarian and a small support staff. The Centre maintains an extensive library of environmental law information that is accessible by the public free of charge.

Funding is provided to the Society in part by the Alberta Law Foundation and also through the generous support of the public. The Centre also accepts private and government research contracts for work relevant to and consistent with the Society's objectives.

For more information, contact:

Environmental Law Centre

204, 10709 Jasper Avenue
Edmonton, AB T5J 3N3

Phone: (780) 424-5099

Fax: (780) 424-5133

Alberta toll-free: 1-800-661-4238

E-mail: elc@elc.ab.ca

URL: <http://www.elc.ab.ca>

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Introduction

What is environmental monitoring?

In many ways, environmental monitoring is a cornerstone of environmental protection. Simply put, it is the act of measuring environmental conditions, and matters that can affect those conditions and the environment as a whole. Monitoring data can give us a picture of the health of our environment and point us to those things that adversely affect it.

Environmental monitoring can be used for a number of purposes. Monitoring can be used to collect initial “baseline data”. Baseline data is used as a starting point to provide an initial snapshot of the condition of an area. Future monitoring results can be compared against the baseline data as a means of assessing any change, either better or worse, in environmental conditions. Monitoring data can also be used to measure the environmental performance of industrial operators, either directly or as an audit. It can indicate when remedial action is needed to restore the environment and can be used as the basis for enforcement action under environmental laws.

Many elements of our environment can be monitored. This includes our air, water, soil and vegetation. As well, the health of animal and human populations can be monitored as an indication of the condition of our environment. Generally, government and industry carry out a great deal of environmental monitoring. Much of this monitoring is technical in nature and can involve complicated and expensive monitoring equipment. However, there are a number of ways that ordinary citizens can become involved in environmental monitoring.

Why is the public interested in environmental monitoring?

One reason for the public’s interest in environmental monitoring is that our society has become much more aware of the effect that we have on our environment, both directly and indirectly through our everyday actions and consumption. With this greater awareness has come greater concern about how our actions and their effects on the environment will ultimately affect us as individuals and our future generations.

As well, given past years’ trends of budget cutbacks and deregulation, many citizens feel that environmental protection and their related concerns are being ignored or pushed aside by government and industry. They mistrust monitoring information produced by these organizations, and become frustrated in their attempts to learn about and understand environmental matters. In many instances, members of the public want to take personal action to protect their environment, but are unsure of how to get started and what to do.

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What can the public do about environmental monitoring?

Ordinary citizens like you are becoming involved in environmental monitoring in increasing numbers. Their involvement runs from activities such as the annual Christmas bird count, which when compiled gives information about the ranges and numbers of various types of birds, to keeping written and pictorial records of stack emissions, to taking samples of water from local watercourses and analyzing these samples for certain environmental indicators. Others review monitoring data created by government and industry in an auditing function, to reassure themselves that they are being presented with an accurate picture of environmental conditions. Still others sit as representatives of the public or special interest groups on bodies involved in environmental monitoring initiatives.

Chapter 2 of *Community Action on Air Quality – A Guidebook to Community Involvement in Air Quality Monitoring and Enforcement* includes an appendix which is an article entitled *Volunteer Monitoring: No Limit*. It gives excellent examples how members of the public can become involved in a wide variety of environmental monitoring activities.

What will use of the *Community Action on Air Quality* package do for you and your community?

At its most basic, use of this package, which includes these background materials and *Community Action on Air Quality – A Guidebook to Community Involvement in Air Quality Monitoring and Enforcement*, and participation in a community monitoring training program will give you skills that will enable you to find, critically review, understand and analyze information about air quality monitoring and enforcement. This will give you greater confidence in your understanding of air quality issues and monitoring data produced by any source. Many of these skills can also be used in relation to environmental matters other than air quality.

Involvement in the development and presentation of a community monitoring training program, or participation in such a program, can bring you into contact with a wide range of individuals involved in air quality matters and increase your familiarity with these people and air quality issues within your community and Alberta. As well, it can provide your community with a means of focusing its air quality concerns and examining how it wants to deal with those concerns.

Ultimately, you can use the knowledge and understanding that you can gain through the use of this package and participation in a community monitoring training program to take personal action in protecting your environment. Having learned about the regulatory requirements related to air quality, you will be able to assess whether an environmental offence may have occurred, and take action to deal with it by reporting the situation to environmental regulators or initiating an investigation under Alberta's environmental laws. In this way, you can take positive action to protect your community and environment and gain a greater element of personal involvement and control over matters that affect you personally.

If you find that you and others within your community have concerns about your local air quality and are committed to spending the time and energy necessary to train your community and undertake monitoring activities, this package can guide you through those steps. It is important that you be realistic about the commitment that you are willing to make, as air quality monitoring and enforcement are not topics that can be easily understood through a quick review.

Developing and presenting a community monitoring training program like that described in this package can take some months. Once you begin monitoring activities, you will need to monitor regularly and on an ongoing basis to compile sufficient data to establish the credibility of your data and identify any environmental trends or unusual conditions.

How should you use the *Community Action on Air Quality* package?

This package consists of two parts. The first part is *Community Action on Air Quality – A Guidebook to Community Involvement in Air Quality Monitoring and Enforcement*, and the other is these background materials.

The guidebook is a “how-to” manual of community monitoring, and deals in detail with community monitoring training programs and subsequent community action to monitor and enforce air quality. It provides you with practical guidance in developing and presenting a community monitoring training program, and in establishing a volunteer group within your community to undertake air quality monitoring activities.

The background materials contain information set up in a “fact sheet” format that can be used as part of a community monitoring training program. These materials have been written in plain, straightforward language, and ideally can be used without any expert assistance. They could be used as the main written information source for participants in a community monitoring training program, and could also be supplemented by additional, more detailed information. It is not necessary to use all of the background materials. They have been designed to enable planners of community monitoring training programs to select the portions that are most relevant to their programs and their communities’ interests and concerns.

Both parts include a number of resource lists for the different topics. These resource lists are intended to refer you and participants in your community monitoring training program to further sources of information on air quality related matters.

About the *Community Action on Air Quality* background materials

As mentioned above, the background materials are intended to provide you with basic information and resource lists for topic areas related to community monitoring of air quality. Like the guidebook, they are written in plain language, to allow you to work through them without assistance if you choose. These materials are presented in an unbound format to facilitate their copying for use in community monitoring training programs, and to allow you to make use of only those materials that relate specifically to your community’s community monitoring training program. Chapter 1 of the guidebook discusses the ways that you can make use of these materials as part of your community monitoring training program in greater detail.

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The background materials are divided into four separate subject areas. Each subject area includes resource lists that provide other sources of information about that subject.

Introduction to Air Matters

The *Introduction to Air Matters* section provides basic background information about different classes of substances that can affect air quality and some air quality issues that may be relevant to your community. The topics covered in separate fact sheets include:

- acid deposition;
- air toxics;
- climate change;
- ozone depletion; and
- smog and ground-level ozone.

The resource list refers to sources of further information about these topics, and also some sources for basic introductory information about atmospheric science.

Air Monitoring

The *Air Monitoring* section provides you with an introduction to different methods of air quality monitoring, namely source monitoring and ambient monitoring. It discusses the purposes and uses of each method and indicates who currently carries out such monitoring in Alberta. One fact sheet deals with source monitoring and another with ambient monitoring.

This section also provides fact sheets on how air monitoring data and results are reported and guidance on how to read and interpret that material. The resource list refers you to various information sources, including sources from which you can obtain monitoring data and results.

Basic Legal Requirements

The fact sheets in the *Basic Legal Requirements* section provide you with a basic overview of laws in general and our legal system, and deal more specifically with environmental laws that apply to air quality in Alberta. Also included is a fact sheet covering how you can find, read and understand laws, focusing on environmental laws. These materials will help you understand how our environmental laws regulate air quality and the activities that can affect air quality.

Enforcement and Community Involvement

The final section, *Enforcement and Community Involvement*, includes a fact sheet that provides an overview of how environmental laws, and more specifically the requirements of the *Environmental Protection and Enhancement Act*, are enforced in Alberta. As well, another fact

sheet offers suggestions and discusses different options for personal involvement in air quality monitoring and enforcement. The resource list refers to various sources and contacts that will be helpful to you and your community in increasing your involvement in air quality monitoring.

About the Community Action on Air Quality guidebook

Community Action on Air Quality – A Guidebook to Community Involvement in Air Quality Monitoring and Enforcement consists of five separate chapters, each with its own resource list. Some chapters have appendices such as checklists or sample forms. Every chapter has been written in plain language and contains many practical tips to assist you in increasing your involvement with community-based air quality monitoring.

Chapter 1

Chapter 1 provides practical guidance on developing and presenting a community monitoring training program. It takes you through the practical steps you should follow to create a program that will address your community's specific needs and concerns about air quality. One of the appendices describes a successful community monitoring training program that provided the basis for *Community Action on Air Quality*. Another appendix is a checklist for you to follow in setting up your own community monitoring training program.

Chapter 2

Chapter 2 sets out a process for establishing a community-based volunteer group to undertake air quality monitoring and enforcement. The emphasis is on the practical concerns that you need to keep in mind in order to give your group its best chance at success. Similar to Chapter 1, it includes a checklist to guide you in setting up your group. Another appendix is an article illustrating the wide range of roles that members of the public can play in environmental monitoring.

Chapters 3 - 5

Chapters 3 – 5 deal with more specific matters that are relevant to the success of both community monitoring training programs and volunteer monitoring groups. Chapter 3 offers practical suggestions on how to make contacts and build partnerships with those who can help your cause. Appendices include a checklist and a sample sheet for recording contact information.

Many people regard government departments as complicated and confusing structures. Environmental regulators can be an important source of information and feedback for your monitoring activities, particularly if you intend to become involved in enforcement matters. Chapter 4 provides you with guidance on working with government regulators who deal with air quality matters and prepares you to navigate your way through government offices.

Chapter 5 deals with the all-important matter of funding. It leads you through the stages of fundraising, from planning and research through proposals and follow-up. The appendices include general fundraising and budgeting checklists. The resource list refers to a wide range of

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information sources on fundraising and a variety of potential funders for community-based environmental projects.

A word of caution about your use of the *Community Action on Air Quality* package

Regardless of how you make use of the guidebook and these background materials in your community monitoring training program and subsequent monitoring activities, it is very important that you check to ensure that the information within them is current to the date of your use. We suggest the following steps:

- Your first step should be to check the Environmental Law Centre home page on the Internet at <<http://www.elc.ab.ca>>. The Centre plans to make any necessary updates to the guidebook and the background materials available on the home page. Both the guidebook and the background materials can be downloaded free of charge from that location. You may also wish to contact the Centre directly if you have specific questions.
- You can make use of the resource lists included in the guidebook and the background materials to check their currency. These lists can also be used to update and supplement these background materials in particular.
- You should seek the input of your contacts, including those involved in planning and presenting your community monitoring training program, in assessing the currency of the package. They may have helpful suggestions for other sources of current information.

We cannot emphasize enough the need to ensure that the guidebook and these background materials are current to the date that you make use of them. This applies in particular to the resource lists. Failure to check and update information, as necessary, may lead you to rely on outdated information, which will be of little or no use to you and others who are interested in protecting local air quality. The success of your community monitoring training program and your other air quality monitoring activities depends largely on your familiarity with the most current information related to air quality monitoring and enforcement.

Introduction to Air Matters

ACID DEPOSITION

NOTE: this material is current to February 1999. Please update your information to the date that these materials are being used. For suggestions on updating these materials, please see the Introduction for Community Action on Air Quality – Background Materials for Community Involvement in Air Quality Monitoring and Enforcement (“A word of caution about your use of the Community Action on Air Quality package”).

What is acid deposition?

Acid deposition refers to the deposition of acidifying compounds from the atmosphere into our environment. The acidifying compounds are formed within the atmosphere through chemical reactions involving sulfur and nitrogen emissions. Wet deposition, more commonly known as acid rain, occurs when acidic droplets fall to earth from the atmosphere. Dry deposition occurs when the acidic substances react directly with soil, plants and water in the environment.

How does acid deposition occur?

The emission of sulfur dioxide (SO₂) into the atmosphere contributes greatly to acid deposition. The sulfur dioxide chemically changes in the atmosphere into sulfuric acid (H₂SO₄). In water droplets, the sulfuric acid falls back to earth as wet deposition. Sulfur dioxide is produced largely by the burning of fossil fuels. In Alberta, major sources of sulfur dioxide include natural gas processing, oil sands plants and coal-fired power plants.

Acid deposition can also result from the presence of nitrogen oxides (NO_x) in the atmosphere. The nitrogen oxides can be converted by chemical reaction to nitric acid (HNO₃), which may then be deposited at ground level through wet or dry deposition. In Alberta, major sources of NO_x are auto exhaust and various industrial activities, including oil and gas production, oil refining, electricity generation and residential fuel combustion.

Two factors must be present for acid deposition to cause environmental harm. The first is the presence of sensitive ecosystems downwind from the source of the pollutants that cause acid deposition. The second is the presence of weather patterns that transport those pollutants to the sensitive ecosystems within the time and distance that allow the acidifying chemical reactions to occur.

Some natural conditions can have an effect on acid deposition. On the prairies, natural levels of airborne alkaline dust act to neutralize the acidity of rainfall. Generally, Alberta has alkaline soils and bedrock, which makes its environment less susceptible to damage from acid deposition than that of eastern Canada. However, there are some areas of northeastern Alberta that are quite sensitive to acid deposition.

What are the effects of acid deposition?

Acid deposition can have effects on the natural and man-made environments and on human health. Vegetation can suffer adverse effects, with agricultural crops suffering from direct damage to plants and from reduced soil fertility, and forests having retarded growth and damage to leaves and needles.

Streams and lakes can become more acidic due to long-term acid deposition. This increased acidity will have effects on beings drinking from and living in the affected waters and can lead to the death of fish in these waters. Acid deposition can also cause the leaching, or movement in dissolved form, of metals from the soil into water, which can result in metal accumulation in the food chain.

In the man-made environment, acid deposition can cause the erosion of stone and brick in buildings and the corrosion of metal. The presence of the pollutants related to acid deposition in the atmosphere can cause reduced visibility and effect the aesthetic enjoyment of the environment, especially in parks and wilderness areas.

In relation to human health, airborne acidic particles can affect lung function and breathing. Severe respiratory problems may occur at high concentrations of these substances, but there is a continuum of effects with exposure to lower levels.

For more information

For further information about acid deposition, check the following sources.

<<http://www.science.yorku.ca/cac/intro.html>>

This Internet site, titled "Introduction to Atmospheric Chemistry", provides basic introductory information about air matters, including acid deposition.

<<http://www.gov.ab.ca/env/resedu/edu/focuson/Acid%20Dep.pdf>>

This Internet site provides access to the Alberta Environmental Protection information document *Focus on Acidic Deposition*. Print copies of this document can be obtained from:

Alberta Environmental Protection
Information Centre
Main Floor, 9920 – 108 Street
Edmonton, AB T5K 2M4
Phone: (780) 427-2079 (toll-free in Alberta by calling 310-0000)
Fax: (780) 427-4407
E-mail: infocent@env.gov.ab.ca

Introduction to Air Matters

AIR TOXICS

NOTE: this material is current to February 1999. Please update your information to the date that these materials are being used. For suggestions on updating these materials, please see the Introduction for Community Action on Air Quality – Background Materials for Community Involvement in Air Quality Monitoring and Enforcement (“A word of caution about your use of the Community Action on Air Quality package”).

What are air toxics?

Toxic substances are substances that can cause adverse effects in living beings, including humans, either as an immediate effect or due to continuing long-term exposure. The term “air toxics” refers to these substances when they are present in the atmosphere.

There are two categories of air toxics that are of particular concern:

- heavy metals, such as mercury, lead and cadmium, and
- persistent organic pollutants (POPs), which include some pesticides, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), and dioxins and furans. POPs are organic compounds that resist being broken down by sunlight, biological action or chemical processes.

Other air toxics are substances such as volatile organic compounds (VOCs), including benzene and carbon tetrachloride.

What are the sources of air toxics?

While some toxics occur naturally, human activity has greatly increased their concentrations in the environment and added many new toxics that are wholly man-made.

Sources of metals in the atmosphere

The main natural sources of metals in the atmosphere are dust blown by wind, volcanoes, forest fires and sea salt spray. With respect to sources related to human activity, virtually every industrial activity that operates at high temperatures releases some metals to the environment. Main sources include:

- the combustion of fossil fuels, which involves personal as well as industrial use,
- metal extraction,
- waste and sludge incineration, and
- metal fabrication and recycling.

Sources of POPs in the atmosphere

There are many types of chemicals that fall within the class of POPs, and they enter the atmosphere from a wide range of sources. Some are present in the atmosphere as a result of intentional use, such as pesticides. Others may enter the atmosphere as byproducts of incineration or other fires, as waste products from industrial or commercial activities, or as a result of accidental discharges. One of the major sources in Alberta is gas dehydrators.

Why are air toxics a concern?

There are a number of reasons why air toxics are an environmental concern. These include:

- the persistent nature of many of these substances,
- the potential for exposure,
- the reliance by modern society on chemicals related to these substances, and
- the effects of these substances on human health and the environment.

Persistence

Many air toxics are referred to as persistent because they take a long time to break down in the environment. This persistence ties in to two factors that are of particular concern:

- the long-range transport of air toxics within the atmosphere, and
- bioaccumulation and biomagnification of these substances within living beings.

Long-range transport

The persistence of many air toxics contributes to the ability for these substances to be transported long distances within the atmosphere. Atmospheric circulation can move large amounts of air pollutants to areas a long distance from where the pollutants were originally emitted. As well, the “grasshopper effect”, which describes the migration of toxic substances through successive emission, transport, deposit and re-emission processes, also can result in the long-range movement of air toxics. For example, monitoring and studies have measured levels of PCBs in the bodies of Arctic wildlife and also in the local human population, although PCBs are generally not manufactured or otherwise found in the Arctic.

The distance of transport of air toxics depends on the composition of the pollutants being transported within the atmosphere. Some of these substances can remain in the atmosphere for long periods without breaking down or otherwise changing. Others may bond to water drops, dust or other materials. In any event, all air toxics will eventually return to earth from the atmosphere, falling as part of rain or snow or as a dry substance.

Bioaccumulation and biomagnification

The persistence of these substances and their presence in the environment is of concern because they tend to accumulate in wildlife in particular in increasing concentrations over time. This is referred to as bioaccumulation. As well, bioaccumulation contributes to biomagnification, which means that the concentrations of toxic substances increase in beings that are higher on the food chain, due to their consumption of beings that have been accumulating increasing concentrations of toxic substances. This consumption magnifies the concentration of the toxic substances within the beings that are higher on the food chain. Humans often occupy the highest spot on the food chain, and thus may be most vulnerable to the effects of biomagnification.

Potential for exposure

As many toxic substances remain in the environment for long periods of time, this increases the potential for exposure for animals and humans. The longer these substances are in the environment, the greater the likelihood of exposure. As well, the persistence of these substances also increases the potential time or amount of exposure to them.

These exposure factors are of concern because even very low levels of toxic substances may cause adverse effects to beings that are continuously exposed to them over a long time period. In some instances, the effects of exposure may not be apparent for several years or may only appear in future generations.

Society's reliance on chemicals

Many toxic substances result from the manufacture and use of chemicals. The number and type of chemicals is constantly increasing and often very little is known about their toxicity and their potential environmental effects. Chemicals are used in virtually every product made in today's society, and can contribute greatly to our quality of life. However, this reliance on chemical use

has lead to a situation in which toxic substances can potentially impact virtually every aspect of human life and activity throughout the world.

Effects of toxic substances

Air toxics can cause a number of human health and environmental effects, particularly where there is prolonged exposure. Due to the wide range of substances that are considered toxic, there is also a wide range of effects. Some effects, in both humans and animals, that have been linked to toxic substances include cancer, cell mutation, birth defects, reproductive damage and failure, and damage to the nervous system and organs.

For more information

For further information about air toxics, check the following sources.

<<http://www.science.yorku.ca/cac/intro.html>>

This Internet site, titled "Introduction to Atmospheric Chemistry", provides basic introductory information about air matters, including air toxics.

Air Toxics Management Program in Alberta

This Alberta Environmental Protection document discusses air toxics in the Alberta context and provides an overview of how Alberta Environmental Protection seeks to control emissions of air toxics from industrial sources. Copies of this document can be obtained from:

Alberta Environmental Protection
Information Centre
Main Floor, 9920 – 108 Street
Edmonton, AB T5K 2M4
Phone: (780) 427-2079 (toll-free in Alberta by calling 310-0000)
Fax: (780) 427-4407
E-mail: infocent@env.gov.ab.ca

The State of Canada's Environment – 1996

This federal government publication provides extensive information about Canada's environment. Chapter 13 deals with toxic substances, including air toxics, in detail. This report can be accessed through libraries. The federal government provides access to the report through the Internet for a charge; see <http://www1.nrc.ec.gc.ca/~soer/sce_of_e.htm> for further information on arranging access. A print version can be purchased from the federal government for \$75.00, which includes free access to the Internet version. For further information, contact:

EPS Publications
Environment Canada
Place Vincent Massey
351 St. Joseph Blvd.
18th Floor
Ottawa, ON K1A 0H3
Phone: 1-800-734-3232

Introduction to Air Matters

CLIMATE CHANGE

NOTE: this material is current to February 1999. Please update your information to the date that these materials are being used. For suggestions on updating these materials, please see the Introduction for Community Action on Air Quality – Background Materials for Community Involvement in Air Quality Monitoring and Enforcement (“A word of caution about your use of the Community Action on Air Quality package”).

What is climate change?

Various gases in the earth’s atmosphere act as an insulating blanket, holding in energy radiated by the planet to keep the land, air and water warm. This is referred to as the “greenhouse effect” and the gases that contribute to this effect are referred to as “greenhouse gases”.

Human activity has resulted in increases in the levels of greenhouse gases in the atmosphere. These increased levels of gases absorb radiated energy from the earth that would otherwise pass into space. The trapping of this extra energy in the atmosphere leads to increased temperatures on the earth’s surface.

What are greenhouse gases?

Greenhouse gases include water vapour, carbon dioxide (CO₂), methane (CH₄), ozone (O₃), and nitrous oxide (N₂O). The main greenhouse gases are carbon dioxide, methane and nitrous oxide. Some of these gases have a greater impact on the greenhouse effect than others. The increase in greenhouse gases has arisen due to greater levels of these gases being produced through human activity, either through their manufacture or through their release into the atmosphere as a result of human activity. Water vapour is naturally occurring, but other greenhouse gases are made mainly through human activity.

Carbon dioxide (CO₂) is the most common greenhouse gas made by human activity. It is produced when any substance containing carbon is burned. Carbon dioxide is naturally removed from the atmosphere by plants and oceans. However, there is currently more carbon dioxide

entering the atmosphere than is being absorbed. This is largely due to the burning of fossil fuels and the cutting down of forests globally.

The sources of Alberta's carbon dioxide emissions that are generated by human activity can be divided into three categories. About one-third of these emissions come from the oil and gas industry, including gas processing, oil sands, pipelines and refineries. Another one-third of Alberta's carbon dioxide emissions come from coal-generated electricity, which is used mainly by individuals for personal purposes. A further one-third of Alberta's carbon dioxide emissions result from energy use in business, industry, residences and transportation, with a main source being transportation in personal vehicles.

What are the effects of climate change?

The matter of climate change is a topic that is the subject of much debate. At present, its effects cannot be determined with certainty. However, scientists have made predictions about possible effects of a significant increase in the earth's temperature.

Possible effects of climate change include:

- substantial changes in precipitation (rain and snow) patterns;
- more extreme weather;
- more frequent and severe droughts; and
- rising sea levels due to melting of glaciers and polar ice and the expansion of oceans as they warm.

Sectors in Alberta that may need to consider possible adaptive action in response to potential effects of climate change include forestry and agriculture. Possible changes in weather patterns could have effects on food production, fresh water supplies, forest growth and land use.

It is thought that climate change could also result in the shifting of vegetation zones. In Alberta, this could result in a shift of the boreal forest northwards or a replacement of some forested areas with grassland. This would obviously have an effect on the forestry sector. While a shifting of vegetation zones may have a positive effect on agriculture in northern regions of Alberta, it is thought that the most southern regions of the province could be adversely affected by climate change, with current agriculturally productive areas becoming non-arable and unable to be used for agricultural production. Some scientists believe that increased carbon dioxide levels in the atmosphere could stimulate plant growth, which may be beneficial to agriculture.

For more information

For further information about climate change, check the following sources.

<<http://www.science.yorku.ca/cac/intro.html>>

This Internet site, titled “Introduction to Atmospheric Chemistry”, provides basic introductory information about air matters, including global warming (climate change).

<http://www2.ec.gc.ca/climate/resource/index_e.html>

This Environment Canada Internet site provides a resource list for climate change information, including bulletins, fact sheets, guides, news releases, quizzes, reports, speeches and links to other sites.

<http://www2.ec.gc.ca/climate/primer/main_e.html>

This Environment Canada Internet site provides access to the document *A Matter of Degrees: A Primer on Climate Change*. Of interest for general information and understanding are section 2 “The Atmospheric Environment” and section 4 “Understanding Climate Change”. Print copies of this document can be obtained free of charge from the Environment Canada Inquiry Centre, phone 1-800-668-6767, fax (819) 953-2225.

<<http://www2.ec.gc.ca/climate/fact/science.html>>

This Environment Canada Internet site provides access to the fact sheet *The Science of Climate Change*, and includes an extensive discussion of the potential effects of global warming on Canada.

<<http://www.ec.gc.ca/pdb/ghg/ghg.html>>

This Environment Canada Internet site focuses on greenhouse gases and contains detailed information on greenhouse gas emissions, including maps and graphs. It also contains information about trends in greenhouse gas emissions.

<<http://www.climatechange.gc.ca>>

This Internet site is the federal government home page on climate change. It includes background information on climate change and its impacts and information about action being taken to address climate change. The resource centre page, which provides climate change links, can be accessed at <<http://www.climatechange.gc.ca/english/html/resource.html>>.

Introduction to Air Matters

OZONE DEPLETION

NOTE: this material is current to February 1999. Please update your information to the date that these materials are being used. For suggestions on updating these materials, please see the Introduction for Community Action on Air Quality – Background Materials for Community Involvement in Air Quality Monitoring and Enforcement (“A word of caution about your use of the Community Action on Air Quality package”).

What is the ozone layer?

The ozone layer is an area within the atmosphere that has a fairly high ozone concentration. It is located about 25 kilometres above the earth at mid latitudes within the stratospheric layer of the atmosphere, which is about 15 – 35 kilometres above the earth. The thickness of the ozone layer varies depending on the latitude. Normally, the ozone layer is thinner over the equatorial region and thicker over the higher latitudes, which includes Alberta. The ozone layer absorbs ultraviolet (UV) light that would otherwise reach the earth’s surface. Most of the ozone within the ozone layer is naturally occurring, arising from reactions between the UV light and oxygen within the atmosphere.

What is ozone depletion?

Ozone depletion

Ozone depletion refers to thinning of the ozone layer. This is different from the day-to-day variations in thickness of the layer; it is instead significant thinning on an ongoing basis of the ozone layer over the earth. The greatest thinning of the ozone layer is apparent over the higher latitudes, including Alberta.

Ozone depletion is caused by the presence of various chemicals, known as ozone-depleting substances, in the stratosphere. These substances, many of which take a long time to break down, react with the UV light and decompose into elements such as chlorine. These products of decomposition, which do not occur naturally within the stratosphere, interfere with the natural ozone cycle and contribute to the depletion of the ozone layer.

Ozone-depleting substances

Ozone-depleting substances are man-made or result from human activity. They include chlorofluorocarbons (CFCs), halons, methane and nitrous oxide (N₂O). CFCs are used in refrigeration, foam blowing, solvents and special aerosol propellants. Halons are similar to CFCs and are used in fire extinguishers. Methane is a gas that is produced by agricultural, industrial and mining activities. Nitrous oxide is produced by fuel combustion and fertilizer use.

Why is ozone depletion a concern?

Thinning of the ozone layer results in an increased amount of UV light reaching the earth's surface. This increase can have a number of effects on the environment and human health. Some of the human health effects that can result from increased UV light include sunburn, skin cancer, eye aging and suppression of the immune system.

Increased UV light can affect the growth of plants, by reducing leaf area and photosynthesis. Many food crops are very sensitive to UV radiation and can suffer damage from increased UV levels. Increased UV levels can also cause damage to aquatic life near the ocean surface, including fish populations. The man-made environment is affected by accelerated aging of industrial materials such as plastics and paints. As well, an increase in the amount of UV light reaching the earth's surface leads to an increase in ground-level ozone and smog.

For more information

For further information about ozone depletion, check the following sources.

<<http://www.science.yorku.ca/cac/intro.html>>

This Internet site, titled "Introduction to Atmospheric Chemistry", provides basic introductory information about air matters, including acid deposition.

<<http://www.doe.ca/ozone/primer/primeroz.html>>

This Environment Canada Internet site provides access to the document *A Primer on Ozone Depletion*.

<<http://www.doe.ca/ozone/indexe.htm>>

This Environment Canada Internet site provides a broad range of information about stratospheric ozone and ozone depletion.

<<http://www.gov.ab.ca/env/resedu/edu/focuson/ozone%20depletion.pdf>>

This Internet site provides access to the Alberta Environmental Protection information document *Focus on Ozone Depletion*. Print copies of this document can be obtained from:

Alberta Environmental Protection
Information Centre
Main Floor, 9920 – 108 Street
Edmonton, AB T5K 2M4
Phone: (780) 427-2079 (toll-free in Alberta by calling 310-0000)
Fax: (780) 427-4407
E-mail: infocent@env.gov.ab.ca

Introduction to Air Matters

SMOG AND GROUND-LEVEL OZONE

NOTE: this material is current to February 1999. Please update your information to the date that these materials are being used. For suggestions on updating these materials, please see the Introduction for Community Action on Air Quality – Background Materials for Community Involvement in Air Quality Monitoring and Enforcement (“A word of caution about your use of the Community Action on Air Quality package”).

What is smog?

Smog is a mixture of air pollutants that can have a variety of effects on the environment and human health. Many people are familiar with the brown haze that can be seen over some urban areas. This is one effect of smog. Smog can also cause short and long-term human health effects, as well as effects on both the natural and man-made environments.

Ozone

What is ozone?

Ozone (O₃), a major component of smog, is created through the chemical reaction of nitrogen oxides (NO_x) and volatile organic compounds (VOCs) in the presence of sunlight. Other pollutants may be involved in these chemical reactions.

Ground-level ozone refers to ozone present at the lower level of the atmosphere (from ground level to about 1 kilometre above the earth). It results from human activity and natural sources. Ozone is created when nitrogen dioxide (NO₂) absorbs sunlight, breaks apart and combines with oxygen. It contributes to the brown haze seen when smog is present and can lead to reduced visibility. It can also give rise to health concerns.

Why is ozone a concern?

Exposure to ozone can cause a variety of human health effects. Immediate effects include eye, nose and throat irritation. Over the short term, ozone can cause coughing, chest pain and

respiratory discomfort. In the long term, continued exposure may contribute to lung tissue damage, chronic lung disease and reduced life expectancy.

Ozone can also have effects on both the natural and man-made environments. Exposure to ozone can cause corrosion of buildings and machinery and the deterioration of rubber products. Agricultural crops and forests can also suffer damage from ozone, including leaf damage, reduced growth and greater susceptibility to insects and diseases.

Nitrogen oxides (NO_x)

A main component of smog is nitrogen oxides (NO_x). These substances include nitric oxide (NO) and nitrogen dioxide (NO₂). NO_x occurs both naturally and from human activity. Natural sources include bacterial processes, biological growth and decay, lightning and fires. Burning of fossil fuels is the main human source of NO_x, but fertilizer use also releases NO_x into the atmosphere. Major sources of NO_x in Alberta include oil and gas production, oil refining, electricity generation, transportation and residential fuel combustion.

Nitric oxide (NO) is the form of NO_x that is most commonly emitted into the atmosphere. It is a colourless, odourless, tasteless non-toxic gas. In the atmosphere, it rapidly oxidizes into nitrogen dioxide (NO₂). Nitrogen dioxide is a reddish-brown gas; it contributes to the brown haze of smog. By itself, it can cause plant injury and reduced crop yields at high levels. These effects occur at lower levels where nitrogen dioxide is combined with ozone or sulphur dioxide. As well, it is a lung irritant and can contribute to greater susceptibility to respiratory infections.

Volatile organic compounds (VOCs)

Volatile organic compounds (VOCs) are chemicals that contain hydrogen and carbon and evaporate easily. They may also contain other elements. Natural sources of VOCs include fossil fuel deposits, volcanoes, vegetation, and bacteria. Man-made sources include transportation and the use of motor vehicle fuel, gasoline evaporation, dry-cleaning solvents, oil-based paints and petrochemical industrial processes. As a result, levels of VOCs tend to be more concentrated in urban and industrial areas. VOCs react in sunlight with NO_x to contribute to the formation of smog.

For more information

For further information about smog and ground-level ozone, check the following sources.

<<http://www.science.yorku.ca/cac/intro.html>>

This Internet site, titled "Introduction to Atmospheric Chemistry", provides basic introductory information about air matters, including ground-level ozone.

<http://www.doe.ca/envpriorities/cleanair_e.htm>

This Environment Canada Internet site includes general information about clean air concerns, in particular smog and ground-level (stratospheric) ozone.

<<http://www.doe.ca/smog/index.html>>

This Environment Canada Internet site is titled "Smog in Canada", and provides a wide range of information about smog and its effects, including human health effects.

<<http://www.doe.ca/ozone/indexe.htm>>

This Environment Canada Internet site provides a broad range of information about stratospheric ozone and ozone depletion.

<http://www2.ec.gc.ca/air_e.html>

This Environment Canada Internet site contains a list of issues and topics related to smog and air quality, and provides a number of links.

Introduction to Air Matters

RESOURCE LIST FOR AIR MATTERS

NOTE: all references are current to February 1999. Please update your information to the date that this material is being used. For suggestions on updating these materials, please see the Introduction for Community Action on Air Quality – Background Materials for Community Involvement in Air Quality Monitoring and Enforcement (“A word of caution about your use of the Community Action on Air Quality package”).

For more information about air matters, check the following sources.

Clean Air Strategic Alliance (CASA)

CASA is a non-profit, multi-stakeholder body that carries out strategic management of air quality in Alberta. It is made up of a Board of Directors representing various stakeholders and project teams that address specific air quality issues. CASA has a wide range of information on air quality matters specific to Alberta, including monitoring information. CASA can be contacted at:

9th Floor, 9940 – 106 Street
Edmonton, AB T5K 2N2
Phone: (780) 427-9793
Fax: (780) 422-3127
E-mail: casa@casahome.org
<<http://www.casahome.org>>

CASA’s website at <<http://www.casahome.org>> is a good source of information about Alberta air quality. Under the link “FAQs”, there are a number of fact sheets dealing with different air matters in the Alberta context, including current and planned action. The site also provides information about CASA’s projects and initiatives.

CASA also maintains another website that provides air quality and ecological data for Alberta, known as the Alberta Ambient Air Data Management System (AAADMS). This site can be accessed at <<http://www.casadata.org>> or through the “CASA Data Warehouse” link on the main CASA website at <<http://www.casahome.org>>.

Environment Canada

This federal government department deals with a wide range of environmental matters, including air quality matters. The Prairie and Northern Region, which includes Alberta, can be contacted at:

Environment Canada
Prairie and Northern Region
200, Twin Atria Building
4999 – 98 Avenue
Edmonton, AB T6B 2X3
Phone: (780) 951-8600 (general information & enquiries); (780) 951-8899
(environmental protection)

For specific information on air quality science, contact the Atmospheric and Hydrological Sciences Division at:

Environment Canada
Prairie and Northern Region
Atmospheric and Hydrological Sciences Division
200, Twin Atria Building
4999 – 98 Avenue
Edmonton, AB T6B 2X3
Phone: (780) 951-8600

Environment Canada also maintains a website on the Internet called “The Green Lane”. It can be accessed at <<http://www.ec.gc.ca>>. It provides links to a great deal of information on air matters and to regional “Green Lane” sites. Alberta is included in the Prairie and Northern regional site.

The federal government publication *The State of Canada’s Environment – 1996* provides extensive information about Canada’s environment. Chapter 13 deals with toxic substances, including air toxics, in detail. This report can be accessed through libraries. The federal government provides access to the report through the Internet for a charge; see <http://www.ncr.ec.gc.ca/~soer/sce_of_e.htm> for further information on arranging access. A print version can be purchased from the federal government for \$75.00, which includes free access to the Internet version. For further information, contact:

EPS Publications
Environment Canada
Place Vincent Massey
351 St. Joseph Blvd.
18th Floor
Ottawa, ON K1A 0H3
Phone: 1-800-734-3232

Alberta Environmental Protection

This provincial government department is primarily responsible for regulation of environmental matters, including air quality, within Alberta.

The Science and Technology Branch of the Environmental Sciences Division deals with air issues, develops standards related to ambient air and compiles inventories related to dispersion modelling and emissions. This branch can be contacted at:

Alberta Environmental Protection
Environmental Sciences Division
Science and Technology Branch
4th Floor, 9820 – 106 Street
Edmonton, AB T5K 2J6
Phone: (780) 427-5883 (toll-free in Alberta by calling 310-0000)
Fax: (780) 422-4192

The Air Toxics Management Program in Alberta, published by Alberta Environmental Protection, discusses air toxics in the Alberta context and provides an overview of how Alberta Environmental Protection seeks to control emission of air toxics from industrial sources. Copies of this document can be obtained from:

Alberta Environmental Protection
Information Centre
Main Floor, 9920 – 108 Street
Edmonton, AB T5K 2M4
Phone: (780) 427-2079 (toll-free in Alberta by calling 310-0000)
Fax: (780) 427-4407
E-mail: infocent@env.gov.ab.ca

Internet sites

<<http://www.science.yorku.ca/cac/intro.html> >

This site, titled “Introduction to Atmospheric Chemistry”, is maintained by York University and provides basic introductory information about air matters. It includes a number of links to air-related sites.

<http://www2.ec.gc.ca/climate/resource/index_e.html>

This Environment Canada site provides a resource list for climate change information, including bulletins, fact sheets, guides, news releases, quizzes, reports, speeches and links to other sites.

<http://www2.ec.gc.ca/climate/primer/main_e.htm>

This Environment Canada site provides access to the document A Matter of Degrees: A Primer on Climate Change. Of interest for general information and understanding are section 2 “The Atmospheric Environment” and section 4 “Understanding Climate Change”. Print copies of this document can be obtained free of charge from the Environment Canada Inquiry Centre, phone 1-800-668-6767, fax (819) 953-2225.

<<http://www2.ec.gc.ca/climate/fact/science.html>>

This Environment Canada site provides access to the fact sheet The Science of Climate Change, and includes an extensive discussion of the potential effects of global warming in Canada.

<http://www.doe.ca/envpriorities/cleanair_e.htm>

This Environment Canada site includes general information about clean air concerns, in particular smog and ground-level (stratospheric) ozone. It also provides links to further information about smog and ground-level (stratospheric) ozone.

<<http://www.doe.ca/smog/index.html>>

This Environment Canada site is titled "Smog in Canada", and provides a wide range of information about smog and its effects, including human health effects.

<<http://www.doe.ca/ozone/primer/primeroz.html>>

This Environment Canada site provides access to the document A Primer on Ozone Depletion.

<<http://www.doe.ca/ozone/indexe.htm>>

This Environment Canada site provides a broad range of information about stratospheric ozone and ozone depletion.

<http://www2.ec.gc.ca/air_e.html>

This Environment Canada site contains a list of issues and topics related to smog and air quality, and provides a number of links.

<<http://www2.ec.gc.ca/pdb/cac/cac.html>>

This site provides access to the Criteria Air Contaminants Emissions Inventories. It includes information about emissions inventories compiled by Environment Canada in cooperation with the provinces. The 1990 inventory information covers sulfur oxides, nitrogen oxides, volatile organic compounds, total suspended particulates and carbon monoxide, and is accessible through this site. The site also provides general information about subsequent inventories.

<<http://www.ec.gc.ca/pdb/ghg/ghg.html>>

This Environment Canada site focuses on greenhouse gases and contains detailed information on greenhouse gas emissions, including maps and graphs. It also contains information about trends in greenhouse gas emissions.

<<http://www.ec.gc.ca/pdb/uaqt/uaqt.html>>

This Environment Canada site deals with urban air quality trends and contains information about urban air quality in relation to ground-level ozone, sulfur dioxide, carbon monoxide and nitrogen dioxide. Also included is information about ambient air quality objectives and air quality index guidelines and the National Urban Air Quality Report for 1981-1990.

<<http://www.climatechange.gc.ca>>

This site is the federal government home page on climate change. It includes background information on climate change and its impacts and information about action being taken to address climate change. The resource centre page, which provides climate change links, can be accessed at <<http://www.climatechange.gc.ca/english/html/resource.html>>

<<http://www.gov.ab.ca/env/resedu/edu/eefocson.html>>

This site provides access to Alberta Environmental Protection's "Focus On" series of environmental information documents. Specific documents related to air matters include Focus on Acidic Deposition at <<http://www.gov.ab.ca/env/resedu/edu/focuson/Acid%20Dep.pdf>>, Focus on Ozone Depletion at <<http://www.gov.ab.ca/env/resedu/edu/focuson/ozone%20depletion.pdf>>, and Focus on Air Quality at <<http://www.gov.ab.ca/env/resedu/edu/focuson/Air%20Quality.pdf>>. There is also Focus on Greenhouse Effect; however, this document is only available in print version.

Print copies of any or all of the "Focus On" series can be obtained from:

Alberta Environmental Protection
Information Centre
Main Floor, 9920 – 108 Street
Edmonton, AB T5K 2M4
Phone: (780) 427-2079 (toll-free in Alberta by calling 310-0000)
Fax: (780) 427-4407
E-mail: infocent@env.gov.ab.ca

Air Quality

Monitoring

SOURCE MONITORING

NOTE: this material is current to February 1999. Please update your information to the date that these materials are being used. For suggestions on updating these materials, please see the Introduction for Community Action on Air Quality – Background Materials for Community Involvement in Air Quality Monitoring and Enforcement (“A word of caution about your use of the Community Action on Air Quality package”).

Basics of source monitoring

Source monitoring involves monitoring specific sources of air emissions. This monitoring seeks to measure the levels of particular substances emitted from the source(s) being monitored. The sources monitored are usually stacks at industrial facilities.

There are three different types of source monitoring:

- manual source emission surveys (also known as stack sampling);
- continuous emission monitoring; and
- visible emissions monitoring.

Manual source emission surveys

This form of source monitoring involves taking samples of air emissions from a stack over a short period of time (for example, one hour). Often this involves the use of equipment referred to as a stack sampling train, which is inserted into a stack to take samples of the emissions within the stack.

Requirements for this form of monitoring are set out in the *Alberta Stack Sampling Code*, an Alberta Environmental Protection guideline. The code includes:

- procedures for sampling and analysis of air emissions from stacks;

- general requirements for stack sampling and analysis of samples; and
- a number of sampling methods for different types of emissions and circumstances.

Continuous emission monitoring

This form of monitoring involves continuous measurement of concentrations of pollutants and their mass emission rates. Measurements are taken on an ongoing year-round basis by equipment that is permanently installed within the stack.

Requirements for this type of monitoring are set out in the *Continuous Emission Monitoring System Code*, a guideline published by Alberta Environmental Protection. This code includes the following requirements for continuous emission monitoring systems:

- design specifications;
- installation requirements;
- operation requirements;
- performance requirements; and
- quality assurance and quality control.

Visible emission monitoring

This form of monitoring involves the observation of a visible emission source and determination of the opacity of that visible emission by a trained individual, known as a visible emissions observer. Opacity is the degree to which a visible emission obstructs the passage of light and the view of the certified observer.

The *Substance Release Regulation* regulates the allowed degree of opacity of visible emissions and also sets out the requirements for training and certification of visible emissions observers. The *Manual for Training and Certification of Observers and Evaluation of Visible Emissions* is the document that sets out specific training and certification requirements. The manual and a training course are used by observers to train in making field evaluations of opacity and in observing and properly recording all relevant information. Observers must obtain a new certification every six months.

Who does source monitoring in Alberta?

In Alberta, source monitoring is carried out by industrial operators and by Alberta Environmental Protection.

Industrial source monitoring

Industrial operators must carry out source monitoring to meet requirements set out in approvals issued under the *Environmental Protection and Enhancement Act* or in applicable codes of practice made under that Act. The results of such monitoring are used to assess operators' compliance with requirements set out in any or all of the following:

- an approval;
- applicable codes of practice;
- the *Environmental Protection and Enhancement Act*;
- the *Substance Release Regulation* or other applicable regulations.

Operators may also carry out other source monitoring in addition to that legally required. This is often done to assess the performance of operating systems and equipment. The Air Quality Monitoring fact sheet *Reporting of Monitoring Data*, from *Community Action on Air Quality - Background Materials for Community Involvement in Air Quality Monitoring and Enforcement*, discusses industry requirements to report monitoring data and the availability of that data to the public.

Government source monitoring

Alberta Environmental Protection (AEP) also carries out source monitoring in accordance with their Source Monitoring Program. Activities carried out under this program include:

- manual source emission surveys (stack sampling) carried out by AEP staff to determine whether an operator is in compliance with legal requirements and to collect evidence. These surveys are done without any advance notice to the operator.
- audits of manual source emission surveys carried out by industry, in which AEP staff observe while industrial operators carry out their stack sampling. This can include audits of sampling procedures used by industry and of the analytical procedures used by the laboratories that analyze industry's samples.
- audits of continuous emission systems by inspection of instruments, procedures and maintenance records. As well, AEP staff may test system operation through the use of gas samples.
- visible emission checks by AEP staff who are certified visible emissions observers.
- review of all source emission survey reports that are submitted by industry to AEP to ensure that industrial operators are in compliance.

The source monitoring activities carried out by AEP focus on assessing compliance with legal requirements by industrial operators. Findings of non-compliance lead to investigation and enforcement by AEP. The Enforcement and Community Involvement fact sheet *Enforcement of the Environmental Protection and Enhancement Act*, from *Community Action on Air Quality - Background Materials for Community Involvement in Air Quality Monitoring and Enforcement*, discusses investigations and enforcement by AEP in greater detail.

For more information

For further information about source monitoring, check the following sources.

The Enforcement and Monitoring Division of Alberta Environmental Protection deals with environmental enforcement and monitoring matters on a province-wide basis, and coordinates the department's activities related to source and ambient air monitoring. This division can be contacted at:

Alberta Environmental Protection
Enforcement and Monitoring Division
11th Floor, 9820 – 106 Street
Edmonton, AB T5K 2J6
Phone: (780) 422-2560 (toll-free in Alberta by calling 310-0000)
Fax: (780) 427-3178

Alberta Environmental Protection has six regional offices for different areas of the province. These regions are responsible for enforcement and monitoring matters at the regional level, and carry out the department's source monitoring program. The regions have staff designated to deal with enforcement and monitoring. To determine the region in which your community is located, contact the regional office closest to your community. The contact information for the regions is listed below, and is also available on the Internet through <http://www.gov.ab.ca/env/info/infocentre/alberta.html>.

Alberta Environmental Protection
Northwest Boreal Region
306, 3rd Floor, Provincial Building
9621 – 96 Avenue, Bag 900-31
Peace River, AB T8S 1T4
Phone: (780) 624-6402 (toll-free in Alberta by calling 310-0000)
Fax: (780) 624-6542

Alberta Environmental Protection
Northeast Boreal Region
4th Floor, 9820 – 106 Street
Edmonton, AB T5K 2J6
Phone: (780) 427-7617 (toll-free in Alberta by calling 310-0000)
Fax: (780) 422-4192

Alberta Environmental Protection
 Northern East Slopes Region
 107, 111 – 54 Street
 Edson, AB T7E 1T2
 Phone (780) 723-8390 (toll-free in Alberta by calling 310-0000)
 Fax: (780) 723-8542

Alberta Environmental Protection
 Parkland Region
 3rd Floor, Provincial Building
 4920 – 51 Street
 Red Deer, AB T4N 6K8
 Phone: (403) 340-4881 (toll-free in Alberta by calling 310-0000)
 Fax: (403) 340-5173

Alberta Environmental Protection
 Bow Region
 Room 303, 2938 – 11 Street N.E.
 Calgary, AB T2E 7L7
 Phone: (403) 297-5959 (toll-free in Alberta by calling 310-0000)
 Fax: (403) 297-6069

Alberta Environmental Protection
 Prairie Region
 245 Provincial Building
 200 – 5th Avenue South
 Lethbridge, AB T1J 4L1
 Phone: (403) 381-5322 (toll-free in Alberta by calling 310-0000)
 Fax: (403) 382-4008

- Please note that information on how to access copies of legislation and some guidelines is available in the Basic Legal Requirements fact sheet *Resource List for Legal Matters*, from *Community Action on Air Quality - Background Materials for Community Involvement in Air Quality Monitoring and Enforcement*.
- *Environmental Protection and Enhancement Act*, S.A. 1992, c.E-13.3.

This Act sets out broad requirements for reporting releases into the environment, including releases of air pollutants. It also provides for the public disclosure of monitoring data and the supporting information necessary to interpret it. It can be accessed on the Internet at <<http://www.gov.ab.ca/qp/acts.html>>.

- *Substance Release Regulation*, A.R. 124/93

This regulation provides limits for specified air emissions and sets out requirements related to visible emissions readings and certification of visible emissions observers. It can be accessed on the Internet at <<http://www.gov.ab.ca/qp/regs.html>>.

- *Alberta Stack Sampling Code*, Publication Number REF. 89, ISBN 0773214062

This code, published by Alberta Environmental Protection, sets out procedures for sampling and analysis of air emissions from industrial sources in Alberta, namely stacks. It includes general requirements for stack sampling and analysis of samples, and specifies a number of methods for sampling and analysis in relation to different types of emissions and circumstances. This code can be purchased for \$49.95 from the Queen's Printer bookstores, listed below, or through the Queen's Printer site on the Internet at <<http://www.gov.ab.ca/qp>>.

Queen's Printer Bookstore
11510 Kingsway Avenue
Edmonton, AB T5G 2Y5
Phone: (780) 427-4952 (toll-free in Alberta by calling 310-0000)
Fax: (780) 452-0668

Queen's Printer Bookstore
Main Floor, McDougall Centre
455 – 6 Street S.W.
Calgary, AB T2P 4E8
Phone: (403) 297-6251 (toll-free in Alberta by calling 310-0000)
Fax: (403) 297-8450

This code can also be accessed at:

Alberta Environmental Protection
Library
6th floor, 9920 – 108 Street
Edmonton, AB T5K 2M4
Phone: (780) 427-5870 (toll-free in Alberta by calling 310-0000)
Fax: (780) 422-0170
E-mail: library@env.gov.ab.ca
<<http://www.augustana.ab.ca/neos/neosevp.htm>>

- *Air Monitoring Directive*

This guideline, published by Alberta Environmental Protection, sets out requirements for carrying out source and ambient air monitoring and reporting monitoring results, and includes specific requirements for a number of different industries. There are requirements for both continuous and static ambient monitoring. The guideline also establishes requirements for monthly and annual reports, contravention reports, and release reporting. This guideline can be accessed at:

Alberta Environmental Protection
 Library
 6th floor, 9920 – 108 Street
 Edmonton, AB T5K 2M4
 Phone: (780) 427-5870 (toll-free in Alberta by calling 310-0000)
 Fax: (780) 422-0170
 E-mail: library@env.gov.ab.ca
 <<http://www.augustana.ab.ca/neos/neosevp.htm>>

- *Manual for Training and Certification of Observers and Evaluation of Visible Emissions*, Publication VEE-2/77

This document, published by Alberta Environmental Protection, is the manual specified by the *Substance Release Regulation* for training and certification of visible emissions observers who may determine the opacity of visible emissions. Observers use this manual, together with a training course, to train in making field evaluations of the opacity of visible emissions and in observing and properly recording all relevant information. The manual also establishes the requirements for certification of observers.

- <<http://www.gov.ab.ca/env/air/airqual/monitor.html>>

This Internet site provides general information about air quality monitoring activities carried out by Alberta Environmental Protection.

- <<http://www.gov.ab.ca/env/dept/facts/compuls.html>>

This Internet site gives access to the fact sheet *The Role of Compulsory Industry Monitoring in Alberta's Environmental Regulatory Program*. This fact sheet discusses monitoring that industry is required to carry out under the *Environmental Protection and Enhancement Act* and related legislation, including air quality monitoring. Print copies of this fact sheet are also available from:

Alberta Environmental Protection
 Information Centre
 Main Floor, 9920 – 108 Street
 Edmonton, AB T5K 2M4
 Phone: (780) 427-2079 (toll-free in Alberta by calling 310-0000)
 Fax: (780) 427-4407
 E-mail: infocent@env.gov.ab.ca

Air Quality

Monitoring

AMBIENT MONITORING

NOTE: this material is current to February 1999. Please update your information to the date that these materials are being used. For suggestions on updating these materials, please see the Introduction for Community Action on Air Quality – Background Materials for Community Involvement in Air Quality Monitoring and Enforcement (“A word of caution about your use of the Community Action on Air Quality package”).

Basics of ambient monitoring

Ambient monitoring involves monitoring of the ambient air for pollutant levels and for other conditions that may affect air quality. Ambient air is the air within the atmosphere; thus ambient monitoring does not involve the sampling of particular emission sources. The quality of ambient air can be affected by emissions from a variety of sources and also by weather-related factors such as wind speed and direction, temperature and humidity levels.

There are two different types of ambient monitoring:

- continuous monitoring; and
- intermittent monitoring.

Continuous monitoring

Continuous monitoring involves monitoring the ambient air on an ongoing basis. This form of monitoring can be used to measure the levels or concentrations of any of a number of pollutants in the atmosphere. Continuous ambient monitoring is also used to measure certain weather conditions that may be relevant to pollutant levels or concentrations, such as wind speed and wind direction.

Intermittent monitoring

Intermittent monitoring involves taking periodic samples of the ambient air. This form of monitoring measures pollutant levels or concentrations at a particular time or over a set period of time.

Requirements for monitoring

Requirements for carrying out both continuous and intermittent ambient monitoring are set out in the *Air Monitoring Directive*, an Alberta Environmental Protection guideline. This includes criteria for:

- selection of monitoring locations;
- sampling procedures and analysis;
- calibration of monitoring equipment; and
- validation and reporting of monitoring data.

Purposes of ambient monitoring

Ambient air monitoring can be carried out to serve a number of purposes. This includes:

- assessment of air quality on a regional basis, and
- providing data to assist in the establishment of specific source emission requirements.

Regional assessment of air quality

Ambient monitoring can be used to assess air quality on an airshed or ecosystem basis. Such data has a number of uses, including determining necessary action for ecosystem protection and determining the state of the regional environment. For example, the Ambient Monitoring Project being carried out through the Clean Air Strategic Alliance (see <http://www.casahome.org/amp.htm> for further details) seeks to develop an integrated air monitoring system throughout Alberta. It seeks to meet objectives related to ambient air quality monitoring in four main categories:

- human health;
- ecosystem health;
- transport of air contaminants over provincial boundaries; and

- visibility.

Development of specific source emission requirements

Once air quality has been determined for a region, the ambient monitoring data can be used to assist regulators in setting source emission requirements for particular facilities or activities within that region. Usually, the specific source emission requirements will be incorporated as part of the terms and conditions contained in a facility's approval issued under the *Environmental Protection and Enhancement Act*. As well, source emission requirements can be set in regulations.

Can ambient air requirements be enforced?

Currently, ambient air requirements in Alberta are set out in two different formats. The *Alberta Ambient Air Quality Guidelines* set permissible levels for a number of different substances that may be found in the air in Alberta. These levels are intended to represent the amounts of substances that would cause the lowest observable effect on sensitive receptors (those exposed to the substances in the air). However, guidelines are not legally enforceable documents, and thus the *Alberta Ambient Air Quality Guidelines* are not enforceable on their own. The Basic Legal Requirements fact sheet *Introduction to the Canadian Legal System*, from *Community Action on Air Quality - Background Materials for Community Involvement in Air Quality Monitoring and Enforcement*, discusses the legal effect of guidelines and other policy documents in greater detail.

Ambient air requirements may also be found in approvals issued to operators of facilities or activities that are regulated under the *Environmental Protection and Enhancement Act*. Often approvals may require operators to carry out ambient monitoring and to report the results of that monitoring to Alberta Environmental Protection. Approvals are legally enforceable documents, and enforcement action can be taken by Alberta Environmental Protection against operators that do not comply with all terms and conditions of their approvals. Further information about approvals can be found in the Basic Legal Requirements fact sheet *Registrations and Approvals*, and more details about enforcement can be found in the Enforcement and Community Involvement fact sheet *Enforcement of the Environmental Protection and Enhancement Act*, both from *Community Action on Air Quality - Background Materials for Community Involvement in Air Quality Monitoring and Enforcement*.

Who does ambient monitoring in Alberta?

In Alberta, ambient monitoring is carried out by industrial operators, Alberta Environmental Protection and other parties with interests in air quality matters.

Industrial ambient monitoring

In some instances, industrial operators must carry out ambient monitoring to meet requirements set out in approvals issued under the *Environmental Protection and Enhancement Act*. Operators may also carry out ambient monitoring in addition to that legally required under their approvals. Operators will often do this to obtain data about ambient air quality in the surrounding area. The Air Quality Monitoring fact sheet *Reporting of Monitoring Data*, from *Community Action on Air Quality - Background Materials for Community Involvement in Air Quality Monitoring and Enforcement*, discusses industry requirements to report monitoring data and the availability of that data to the public.

Government ambient monitoring

Continuous monitoring

Alberta Environmental Protection carries out ambient air quality monitoring throughout the province. It operates a number of monitoring stations, which carry out continuous monitoring for the following substances in the ambient air:

- carbon monoxide;
- dust and smoke (referred to as “coefficient of haze”);
- nitrogen oxides;
- nitrogen dioxide;
- nitric oxide;
- ozone;
- total hydrocarbons;
- hydrogen sulfide;
- sulfur dioxide;
- carbon dioxide;
- ammonia; and
- inhalable particulates.

Concentrations of each pollutant that is continuously monitored are averaged over one-hour time intervals for recording purposes. Alberta Environmental Protection provides further information about its continuous monitoring activities on the Internet at <http://www.gov.ab.ca/env/air/airqual/contin.html>.

Intermittent monitoring

Alberta Environmental Protection also carries out intermittent monitoring at its monitoring stations for the following substances:

- total suspended particulates;
- sulfate;
- nitrate; and
- polycyclic aromatic hydrocarbons.

As well, some of its monitoring stations in urban areas monitor intermittently for inhalable particulates and volatile organic compounds. Further information about Alberta Environmental Protection's intermittent monitoring activities can be found on the Internet at <http://www.gov.ab.ca/env/air/airqual/inter.html>.

Mobile monitoring

Alberta Environmental Protection also has a Mobile Air Monitoring Laboratory (MAML), which is a large motor home that has been adapted to measure air quality. The MAML can monitor the ambient air while it is in motion. The following substances can be monitored by the MAML:

- carbon monoxide;
- ozone;
- total hydrocarbons;
- reactive hydrocarbons;
- methane;
- nitric oxide;
- nitrogen dioxide;
- total nitrogen oxides;
- sulfur dioxide;

- total reduced sulfur;
- hydrogen sulfide;
- particulates; and
- polycyclic aromatic hydrocarbons.

The MAML also monitors wind speed, wind direction, temperature and relative humidity. More information about the MAML can be found on the Internet at <http://www.gov.ab.ca/env/air/airqual/maml.html>.

Availability of government monitoring data

Some of Alberta Environmental Protection's air monitoring data is available through different sources. The Air Quality Monitoring fact sheet *Reporting of Monitoring Data*, from *Community Action on Air Quality - Background Materials for Community Involvement in Air Quality Monitoring and Enforcement*, provides further information on accessing government data.

Other ambient monitoring

The Clean Air Strategic Alliance (CASA) is a non-profit, multi-stakeholder body that carries out strategic management of air quality in Alberta. CASA developed a strategic plan for ambient air quality monitoring in Alberta that was adopted in 1995, and is being implemented in three phases. This plan calls for a network of air quality monitors throughout Alberta, with emphasis on areas where people live. The network is intended to provide information that will relate to human and ecosystem health, transport of air pollutants over provincial boundaries, and visibility. More detail about the CASA Ambient Monitoring Project can be found on the Internet at <http://www.casahome.org/amp.htm>.

A number of organizations contribute monitoring stations to the province-wide monitoring network, including Alberta Environmental Protection, Environment Canada, industrial associations, and the airshed management zones established under CASA. Data produced by this network is collected, verified and then logged into a central data warehouse, called the Alberta Ambient Air Data Management System (AAADMS). All monitoring information contained in the AAADMS is accessible to stakeholders and the public in a variety of formats through the Internet, at <http://www.casadata.org>.

For more information

For further information about ambient monitoring, check the following sources.

- The Enforcement and Monitoring Division of Alberta Environmental Protection deals with environmental enforcement and monitoring matters on a province-wide basis, and

coordinates the department's activities related to source and ambient air monitoring. This division can be contacted at:

Alberta Environmental Protection
Enforcement and Monitoring Division
11th Floor, 9820 – 106 Street
Edmonton, AB T5K 2J6
Phone: (780) 422-2560 (toll-free in Alberta by calling 310-0000)
Fax: (780) 427-3178

- Alberta Environmental Protection maintains telephone numbers in Edmonton and Calgary through which it provides current information on air quality conditions. In Edmonton, call 427-7273 and in Calgary, call 250-2099. Both numbers can be reached toll-free within Alberta by calling 310-0000.
- The Clean Air Strategic Alliance (CASA) is a non-profit, multi-stakeholder body that carries out strategic management of air quality in Alberta. It is made up of a Board of Directors representing various stakeholders and project teams that address specific air quality issues. CASA has a wide range of information on air quality matters specific to Alberta, including monitoring information. CASA can be contacted at:

Clean Air Strategic Alliance
9th Floor, 9940 – 106 Street
Edmonton, AB T5K 2N2
Phone: (780) 427-9793
Fax: (780) 422-3127
E-mail: casa@casahome.org
<<http://www.casahome.org>>

- CASA's website, at <<http://www.casahome.org>>, is a good source of information about Alberta air quality, including monitoring. The site provides information about CASA's projects, including information on the Ambient Monitoring Project at <<http://www.casahome.org/amp.htm>>. Print information on the Ambient Monitoring Project can also be obtained from CASA.
- The Fall 1997 issue of the CASA newsletter *Clean Air Views* (Vol. 6, Issue 2) contains a number of articles related to air quality monitoring in Alberta, including articles about the ambient air monitoring network in Alberta and Alberta Environmental Protection's Mobile Air Monitoring Laboratory. Copies of this issue can be obtained from CASA.
- CASA maintains a second website that provides air quality and ecological data for Alberta, known as the Alberta Ambient Air Data Management System (AAADMS). Air monitoring data from the provincial ambient air monitoring network is directed to this location and can be accessed in a number of different formats. This user-friendly site can be accessed at <<http://www.casadata.org>> or through the "CASA Data Warehouse" link on the main CASA website at <<http://www.casahome.org>>.

- There are three existing airshed management zones that have been established under CASA. Airshed management zones are established to deal with air quality issues in a specific region. This includes carrying out air quality monitoring for the region. The existing airshed management zones are the West Central Airshed Society, which covers west central Alberta, the Parkland Airshed Management Zone, which covers central Alberta directly south of the West Central zone, and the Southern Wood Buffalo zone, which covers the northeastern area of Alberta, including the Fort McMurray and Fort McKay areas. Information about the monitoring activities and data of these zones can be obtained through the CASA website at <<http://www.casahome.org/zones.htm>>, or by contacting the zones directly as follows:

West Central Airshed Society
 P.O. Box 6360
 Drayton Valley, AB T7A 1R8
 <<http://www.casahome.org/wcas.htm>>

Parkland Airshed Management Zone
 P.O. Box 299
 Sundre, AB T0X 1X0
 Phone: (403) 638-2631
 Fax: (403) 335-9207
 e-mail: casa@casahome.org
 <<http://www.casahome.org/pamz.htm>>

Southern Wood Buffalo Zone
 c/o Wood Buffalo Environmental Association
 Box 5567
 Fort McMurray, AB T9H 3G5
 e-mail: airmon@telusplanet.net
 <<http://www.wbea.org>>
 <<http://www.casahome.org/raqcc.htm>>

- Please note that information on how to access copies of legislation and some guidelines is available in the Basic Legal Requirements fact sheet *Resource List for Legal Matters*, from *Community Action on Air Quality - Background Materials for Community Involvement in Air Quality Monitoring and Enforcement*.

- *Environmental Protection and Enhancement Act*, S.A. 1992, c.E-13.3.

This Act sets out broad requirements for reporting releases into the environment, including releases of air pollutants. It also provides for the public disclosure of monitoring data and the supporting information necessary to interpret it. It can be accessed on the Internet at <<http://www.gov.ab.ca/qp/acts.html>>.

- *Air Monitoring Directive*

This guideline, published by Alberta Environmental Protection, sets out requirements for carrying out source and ambient air monitoring and reporting monitoring results, and includes specific requirements for a number of different industries. There are requirements for both continuous and static ambient monitoring. The guideline also established

requirements for monthly and annual reports, contravention reports, and release reporting. This guideline can be accessed at:

Alberta Environmental Protection
Library
6th floor, 9920 – 108 Street
Edmonton, AB T5K 2M4
Phone: (780) 427-5870 (toll-free in Alberta by calling 310-0000)
Fax: (780) 422-0170
E-mail: library@env.gov.ab.ca
<<http://www.augustana.ab.ca/neos/neosevp.htm>>

- *Alberta Ambient Air Quality Guidelines*

These guidelines, published by Alberta Environmental Protection, set levels for a number of substances for the ambient air in Alberta, including:

- sulfur dioxide,
- hydrogen sulfide,
- nitrogen dioxide,
- carbon monoxide,
- ground level ozone,
- suspended particulates,
- dustfall,
- coefficient of haze (dust and smoke),
- ammonia,
- static total sulfation,
- static hydrogen sulfide, and
- static fluorides.

A fact sheet on these guidelines can be accessed on the Internet at <<http://www.gov.ab.ca/env/dept/facts/airqualt.html>>. Print copies of the fact sheet can be obtained from:

Alberta Environmental Protection
Information Centre
Main Floor, 9920 – 108 Street
Edmonton, AB T5K 2M4
Phone: (780) 427-2079 (toll-free in Alberta by calling 310-0000)
Fax: (780) 427-4407
E-mail: infocent@env.gov.ab.ca

- <<http://www.gov.ab.ca/env/air/airqual/contin.html>>

This Internet site provides information about and the locations of the ambient air monitoring stations operated by Alberta Environmental Protection that carry out continuous monitoring.

- <<http://www.gov.ab.ca/env/air/airqual/inter.html>>

This Internet site provides information about and the locations of the ambient air monitoring stations operated by Alberta Environmental Protection that carry out intermittent monitoring.

- <<http://www.gov.ab.ca/env/air/airqual/iqua.html>>

This Internet site provides access to an Alberta Environmental Protection fact sheet about the Index of Quality of Air, a means of measuring ambient air quality in Alberta. Print copies of this fact sheet can be obtained from Alberta Environmental Protection's Information Centre (see contact information above). Print copies can also be ordered through the Internet at <<http://www.gov.ab.ca/env/info/infocentre/order.html>>. When ordering, quote order number 619-E-13.

- <<http://www.gov.ab.ca/env/air/airqual/maml.html>>

This Internet site provides access to a fact sheet about Alberta Environmental Protection's Mobile Air Monitoring Laboratory. Print copies of this fact sheet can be obtained from Alberta Environmental Protection's Information Centre (contact information above).

- <<http://www.gov.ab.ca/env/air/airqual/quart.html>>

This Internet site provides access to quarterly reports on ambient air monitoring carried out by Alberta Environmental Protection. The earliest reporting time period that is accessible at this site is January-March 1997. Print copies of quarterly reports dating from April-June 1995 can be obtained from Alberta Environmental Protection's Information Centre (contact information above). Print copies of these reports can also be ordered through the Internet; see <<http://www.gov.ab.ca/env/info/infocentre/pubair.html>> for order numbers for specific reports and for access to the electronic order form.

- <<http://www.gov.ab.ca/env/air/airqual/annual.html>>

This Internet site provides access to annual reports on ambient air quality monitoring carried out by Alberta Environmental Protection. Currently, reports for 1994-1996 are available. Print copies of these reports can be obtained from Alberta Environmental Protection's Information Centre (contact information above). Print copies of these reports can also be ordered through the Internet; see <<http://www.gov.ab.ca/env/info/infocentre/pubair.html>> for order numbers for specific reports and for access to the electronic order form.

- <<http://www.gov.ab.ca/env/air/airqual/special.html>>

This Internet site provides access to reports on special air quality surveys carried out by Alberta Environmental Protection. These are air monitoring activities carried out by the department in addition to its regular monitoring activities. Print copies of these reports can be obtained from Alberta Environmental Protection's Information Centre (contact information above). Print copies of these reports can also be ordered through the Internet; see <<http://www.gov.ab.ca/env/info/infocentre/pubair.html>> for order numbers for specific reports and for access to the electronic order form.

Air Quality

Monitoring

REPORTING OF MONITORING DATA

NOTE: this material is current to February 1999. Please update your information to the date that these materials are being used. For suggestions on updating these materials, please see the Introduction for Community Action on Air Quality – Background Materials for Community Involvement in Air Quality Monitoring and Enforcement (“A word of caution about your use of the Community Action on Air Quality package”).

Various parties carry out air quality monitoring in Alberta. A number of these parties may be required by law to report their monitoring data, and others voluntarily make their monitoring data publicly available.

Industrial reporting

Reporting under approvals

Industrial operators carry out much of their air monitoring activities to comply with requirements imposed by approvals granted to them under the *Environmental Protection and Enhancement Act*. These approvals also require operators to report their monitoring results to Alberta Environmental Protection. Generally, approvals require operators to submit monthly and annual air monitoring reports. The format for these reports is prescribed by the *Air Monitoring Directive*, an Alberta Environmental Protection guideline.

As well, approvals generally require industrial operators to report any contravention of the approval or the *Environmental Protection and Enhancement Act* to Alberta Environmental Protection. Operators must provide the details of any contravention as part of such a report, which may include relevant monitoring data.

Accessibility of monitoring data

Monitoring information submitted to Alberta Environmental Protection in compliance with approval requirements can be obtained and reviewed by the public, as provided for in section 33 of the *Environmental Protection and Enhancement Act* and the *Disclosure of Information Regulation*. Section 33 requires that monitoring data provided under an approval and the

processing information necessary to interpret that data be made publicly available. The *Disclosure of Information Regulation* requires persons seeking information under section 33 to request the information from the approval holder (industrial operator) first. If the information cannot be obtained from the approval holder, a request for the monitoring information can be made to Alberta Environmental Protection.

Release reporting

Industrial operators, as well as others, are also required to report information related to releases of substances into the environment that cause or may cause an adverse effect. This can include releases of air pollutants. These requirements are imposed by the *Environmental Protection and Enhancement Act* and the *Release Reporting Regulation*, and apply regardless of whether or not there is an approval in effect.

Persons who cause such releases, or have control of the substance that is released, are required to make an immediate oral report about the release to Alberta Environmental Protection. Other parties that must be informed of a release include:

- the owner or person having control of the released substance,
- a supervisor or other person whom the person reporting the release reports to in an employment relationship, and
- anyone who may be directly affected by the release.

A subsequent written report is also required under the Act and the *Release Reporting Regulation*. The regulation also provides further details about the types of releases that are to be reported and the content and procedure for submitting written release reports.

Alberta Environmental Protection

Alberta Environmental Protection carries out both source and ambient monitoring activities. Section 33 of the *Environmental Protection and Enhancement Act* requires that Alberta Environmental Protection make monitoring data created by it under the Act and processing information necessary to interpret that data publicly available.

Some of the Department's air monitoring data is available on the Internet through its home page at <<http://www.gov.ab.ca/env>>. This information is also available in the Departmental library. It is also possible to obtain copies of monitoring information by contacting the Department directly. The Air Quality Monitoring fact sheet *Resource List for Air Quality Monitoring*, from *Community Action on Air Quality - Background Materials for Community Involvement in Air Quality Monitoring and Enforcement*, provides information on how to contact these sources.

Other sources

Much of the ambient air monitoring data collected in Alberta is compiled within a central data warehouse operated by the Clean Air Strategic Alliance (CASA). This includes monitoring information provided by Alberta Environmental Protection, Environment Canada, industrial associations and the airshed management zones operating under CASA. This central data warehouse is referred to as the Alberta Ambient Air Data Management System (AAADMS). The monitoring information contained in AAADMS is publicly available through the Internet at <<http://www.casadata.org>> and can be accessed in a number of formats.

Airshed monitoring zones under CASA deal with air quality for their specific region and carry out air monitoring within the region. Monitoring data from the zones is directed to the AAADMS; however, it should also be available directly from the zones. Further information on contacting the zones is available in the Air Quality Monitoring fact sheet *Resource List for Air Quality Monitoring*, from *Community Action on Air Quality - Background Materials for Community Involvement in Air Quality Monitoring and Enforcement*.

For more information

For further information about the reporting of air quality monitoring data in Alberta, check the following sources.

- The Enforcement and Monitoring Division of Alberta Environmental Protection deals with environmental enforcement and monitoring matters on a province-wide basis, and coordinates the department's activities related to source and ambient air monitoring. This division can be contacted at:

Alberta Environmental Protection
Enforcement and Monitoring Division
11th Floor, 9820 – 106 Street
Edmonton, AB T5K 2J6
Phone: (780) 422-2560 (toll-free in Alberta by calling 310-0000)
Fax: (780) 427-3178

- Alberta Environmental Protection has six regional offices for different areas of the province. These region are responsible for enforcement and monitoring matters at the regional level, and carry out the department's source monitoring program. The regions have staff designated to deal with enforcement and monitoring. To determine the region in which your community is located, contact the regional office closest to your community. The contact information for the regions is listed below, and is also available on the Internet through <<http://www.gov.ab.ca/env/info/infocentre/alberta.html>>.

AIR QUALITY MONITORING **Reporting of Monitoring Data**

Alberta Environmental Protection
Northwest Boreal Region
306, 3rd Floor, Provincial Building
9621 – 96 Avenue, Bag 900-31
Peace River, AB T8S 1T4
Phone: (780) 624-6402 (toll-free in Alberta by calling 310-0000)
Fax: (780) 624-6542

Alberta Environmental Protection
Northeast Boreal Region
4th Floor, 9820 – 106 Street
Edmonton, AB T5K 2J6
Phone: (780) 427-7617 (toll-free in Alberta by calling 310-0000)
Fax: (780) 422-4192

Alberta Environmental Protection
Northern East Slopes Region
107, 111 – 54 Street
Edson, AB T7E 1T2
Phone (780) 723-8390 (toll-free in Alberta by calling 310-0000)
Fax: (780) 723-8542

Alberta Environmental Protection
Parkland Region
3rd Floor, Provincial Building
4920 – 51 Street
Red Deer, AB T4N 6K8
Phone: (403) 340-4881 (toll-free in Alberta by calling 310-0000)
Fax: (403) 340-5173

Alberta Environmental Protection
Bow Region
Room 303, 2938 – 11 Street N.E.
Calgary, AB T2E 7L7
Phone: (403) 297-5959 (toll-free in Alberta by calling 310-0000)
Fax: (403) 297-6069

Alberta Environmental Protection
Prairie Region
245 Provincial Building
200 – 5th Avenue South
Lethbridge, AB T1J 4L1
Phone: (403) 381-5322 (toll-free in Alberta by calling 310-0000)
Fax: (403) 382-4008

- Alberta Environmental Protection maintains telephone numbers in Edmonton and Calgary through which it provides current information on air quality conditions. In Edmonton, call 427-7273 and in Calgary, call 250-2099. Both numbers can be reached toll-free within Alberta by calling 310-0000.

- The Clean Air Strategic Alliance (CASA) maintains a website that provides air quality and ecological data for Alberta, known as the Alberta Ambient Air Data Management System (AAADMS). Air monitoring data from the provincial ambient air monitoring network is directed to this location and can be accessed in a number of different formats. This user-friendly site can be accessed at <<http://www.casadata.org>> or through the “CASA Data Warehouse” link on the main CASA website at <<http://www.casahome.org>>.
- There are three existing airshed management zones that have been established under the Clean Air Strategic Alliance (CASA). Airshed management zones are established to deal with air quality issues in a specific region. This includes carrying out air quality monitoring for the region. The existing airshed management zones are the West Central Airshed Society, which covers west central Alberta, the Parkland Airshed Management Zone, which covers central Alberta directly south of the West Central zone, and the Southern Wood Buffalo zone, which covers the northeastern area of Alberta, including the Fort McMurray and Fort McKay areas. Information about the monitoring activities and data of these zones can be obtained through the CASA website at <<http://www.casahome.org/zones.htm>>, or by contacting the zones directly as follows:

West Central Airshed Society
P.O. Box 6360
Drayton Valley, AB T7A 1R8
<<http://www.casahome.org/wcas.htm>>

Parkland Airshed Management Zone
P.O. Box 299
Sundre, AB T0X 1X0
Phone: (403) 638-2631
Fax: (403) 335-9207
e-mail: casa@casahome.org
<<http://www.casahome.org/pamz.htm>>

Southern Wood Buffalo Zone
c/o Wood Buffalo Environmental Association
Box 5567
Fort McMurray, AB T9H 3G5
e-mail: airmon@telusplanet.net
<<http://www.wbea.org>>
<<http://www.casahome.org/raqcc.htm>>

- Please note that information on how to access copies of legislation and some guidelines is available in the Basic Legal Requirements fact sheet *Resource List for Legal Matters*, from *Community Action on Air Quality - Background Materials for Community Involvement in Air Quality Monitoring and Enforcement*.
- *Environmental Protection and Enhancement Act*, S.A. 1992, c.E-13.3.

This Act sets out broad requirements for reporting releases into the environment, including releases of air pollutants. It also provides for the public disclosure of monitoring data and the supporting information necessary to interpret it. It can be accessed on the Internet at <<http://www.gov.ab.ca/qp/acts.html>>.

- *Release Reporting Regulation, A.R. 117/93*

This regulation provides the details about the types of releases that must be reported under the *Environmental Protection and Enhancement Act* and the requirements for providing written release reports. It can be accessed on the Internet at <http://www.gov.ab.ca/qp/regs.html>.

- *Release Reporting Guideline*

This guideline, published by Alberta Environmental Protection, elaborates on the *Release Reporting Regulation* by providing greater detail on the types of releases and amounts of released substances that are reportable under that regulation. This guideline can be obtained from:

Alberta Environmental Protection
Information Centre
Main Floor, 9920 – 108 Street
Edmonton, AB T5K 2M4
Phone: (780) 427-2079 (toll-free in Alberta by calling 310-0000)
Fax: (780) 427-4407
E-mail: infocent@env.gov.ab.ca

This guideline can also be ordered through the Internet at <http://www.gov.ab.ca/env/info/infocentre/order.html>. When ordering, quote order number 787-F.

- *Air Monitoring Directive*

This guideline, published by Alberta Environmental Protection, sets out requirements for carrying out source and ambient air monitoring and reporting monitoring results, and includes specific requirements for a number of different industries. There are requirements for both continuous and static ambient monitoring. The guideline also established requirements for monthly and annual reports, contravention reports, and release reporting. This guideline can be accessed at:

Alberta Environmental Protection
Library
6th floor, 9920 – 108 Street
Edmonton, AB T5K 2M4
Phone: (780) 427-5870 (toll-free in Alberta by calling 310-0000)
Fax: (780) 422-0170
E-mail: library@env.gov.ab.ca
<http://www.augustana.ab.ca/neos/neosevp.htm>

- <http://www.gov.ab.ca/env/air/airqual/iqua.html>

This Internet site provides access to an Alberta Environmental Protection fact sheet about the Index of Quality of Air, a means of measuring ambient air quality in Alberta. Print copies of this fact sheet can be obtained from Alberta Environmental Protection's Information Centre (contact information above). Print copies can also be ordered through the Internet at

<<http://www.gov.ab.ca/env/info/infocentre/order.html>>. When ordering, quote order number 619-E-13.

- <<http://www.gov.ab.ca/env/air/airqual/quart.html>>

This Internet site provides access to quarterly reports on ambient air monitoring carried out by Alberta Environmental Protection. The earliest reporting time period that is accessible at this site is January-March 1997. Print copies of quarterly reports dating from April-June 1995 can be obtained from Alberta Environmental Protection's Information Centre (contact information above). Print copies of these reports can also be ordered through the Internet; see <<http://www.gov.ab.ca/env/info/infocentre/pubair.html>> for order numbers for specific reports and for access to the electronic order form.

- <<http://www.gov.ab.ca/env/air/airqual/annual.html>>

This Internet site provides access to annual reports on ambient air quality monitoring carried out by Alberta Environmental Protection. Currently, reports for 1994-1996 are available. Print copies of these reports can be obtained from Alberta Environmental Protection's Information Centre (contact information above). Print copies of these reports can also be ordered through the Internet; see <<http://www.gov.ab.ca/env/info/infocentre/pubair.html>> for order numbers for specific reports and for access to the electronic order form.

- <<http://www.gov.ab.ca/env/air/airqual/special.html>>

This Internet site provides access to reports on special air quality surveys carried out by Alberta Environmental Protection. These are air monitoring activities carried out by the department in addition to its regular monitoring activities. Print copies of these reports can be obtained from Alberta Environmental Protection's Information Centre (contact information above). Print copies of these reports can also be ordered through the Internet; see <<http://www.gov.ab.ca/env/info/infocentre/pubair.html>> for order numbers for specific reports and for access to the electronic order form.

Air Quality

Monitoring

TIPS ON READING AND UNDERSTANDING MONITORING INFORMATION

NOTE: this material is current to February 1999. Please update your information to the date that these materials are being used. For suggestions on updating these materials, please see the Introduction for Community Action on Air Quality – Background Materials for Community Involvement in Air Quality Monitoring and Enforcement (“A word of caution about your use of the Community Action on Air Quality package”).

As you may have determined from the materials in this package, there are a number of sources for obtaining monitoring information. The following notes provide you with some suggestions to assist you in reading and understanding air monitoring information.

Measurement matters

One of the first things you will want to check in reviewing monitoring data is the various units of measurement related to the data. This may include a time element; for example, continuous monitoring data may be presented in a chart showing the levels or concentrations on an hourly basis for the 24-hour clock. For continuous monitoring, the figures provided may be the result of averaging readings over a particular time period, such as one, eight or twenty-four hour periods.

The unit of measurement used in relation to the monitoring data is very relevant. This is often parts per million (“ppm”) of a substance, and should be indicated as part of the data report or summary. If you are comparing monitoring data with regulated levels or concentrations, be sure that you are looking at the same unit of measurement for both. If the units of measurement used differ, find out what the conversion factor is and adjust the data, or ask for help in doing so.

Notes and other helpful stuff

You should carefully review the monitoring information and the report or other format in which it is presented. It may include notes or other information that will be helpful to you in understanding the monitoring data. Examples of this include explanations of abbreviations used

in the data or descriptions of the method for calculating data figures. There may also be information about the amount of time the monitoring equipment was operational during the monitoring period, which can be relevant in determining what weight to give the monitoring results.

Some sources of monitoring information include information that may assist you in reviewing and understanding the data. For example, the Alberta Ambient Air Data Management System (AAADMS) site provides options to access ambient air monitoring data in a variety of formats. Visitors to this Internet site at <<http://www.casadata.org>> can also view samples of different information formats available on the site.

Alberta Environmental Protection provides its monitoring information in straightforward formats in its quarterly reports, including a summary of the information highlights, and charts and tables related to concentrations, instances where limits were exceeded and the index of the quality of air.

So what does it all mean?

One way that you can try to put the monitoring data you are reviewing into context is to compare the monitoring results to the regulated limits. As mentioned above, if you are doing this, be sure that the figures you are comparing are based on the same units of measurement.

You can find regulated limits that relate to source monitoring data in approvals issued under the *Environmental Protection and Enhancement Act* and in the *Substance Release Regulation*. Copies of approvals can be obtained from Alberta Environmental Protection's Regulatory Approval Centre in Edmonton. Limits related to ambient monitoring data can be found in the *Alberta Ambient Air Quality Guidelines*, which are published by Alberta Environmental Protection.

For more information

For further information related to this fact sheet, check the following sources.

- The Enforcement and Monitoring Division of Alberta Environmental Protection deals with environmental enforcement and monitoring matters on a province-wide basis, and coordinates the department's activities related to source and ambient air monitoring. This division can be contacted at:

Alberta Environmental Protection
Enforcement and Monitoring Division
11th Floor, 9820 – 106 Street
Edmonton, AB T5K 2J6
Phone: (780) 422-2560 (toll-free in Alberta by calling 310-0000)
Fax: (780) 427-3178

- Alberta Environmental Protection has six regional offices for different areas of the province. These regions are responsible for enforcement and monitoring matters at the regional level, and carry out the department's source monitoring program. The regions have staff designated to deal with enforcement and monitoring. To determine the region in which your community is located, contact the regional office closest to your community. The contact information for the regions is listed below, and is also available on the Internet through <http://www.gov.ab.ca/env/info/infocentre/alberta.html>.

Alberta Environmental Protection
Northwest Boreal Region
306, 3rd Floor, Provincial Building
9621 – 96 Avenue, Bag 900-31
Peace River, AB T8S 1T4
Phone: (780) 624-6402 (toll-free in Alberta by calling 310-0000)
Fax: (780) 624-6542

Alberta Environmental Protection
Northeast Boreal Region
4th Floor, 9820 – 106 Street
Edmonton, AB T5K 2J6
Phone: (780) 427-7617 (toll-free in Alberta by calling 310-0000)
Fax: (780) 422-4192

Alberta Environmental Protection
Northern East Slopes Region
107, 111 – 54 Street
Edson, AB T7E 1T2
Phone (780) 723-8390 (toll-free in Alberta by calling 310-0000)
Fax: (780) 723-8542

Alberta Environmental Protection
Parkland Region
3rd Floor, Provincial Building
4920 – 51 Street
Red Deer, AB T4N 6K8
Phone: (403) 340-4881 (toll-free in Alberta by calling 310-0000)
Fax: (403) 340-5173

Alberta Environmental Protection
Bow Region
Room 303, 2938 – 11 Street N.E.
Calgary, AB T2E 7L7
Phone: (403) 297-5959 (toll-free in Alberta by calling 310-0000)
Fax: (403) 297-6069

Alberta Environmental Protection
Prairie Region
245 Provincial Building
200 – 5th Avenue South
Lethbridge, AB T1J 4L1
Phone: (403) 381-5322 (toll-free in Alberta by calling 310-0000)
Fax: (403) 382-4008

- The Clean Air Strategic Alliance (CASA) maintains a website that provides air quality and ecological data for Alberta, known as the Alberta Ambient Air Data Management System (AAADMS). Air monitoring data from the provincial ambient air monitoring network is directed to this location and can be accessed in a number of different formats. The site will let you look at samples of the different formats to help you decide what format you need (see “Ambient Air Reports” on the website). This user-friendly site can be accessed at <<http://www.casadata.org>> or through the “CASA Data Warehouse” link on the main CASA website at <<http://www.casahome.org>>.
- Please note that information on how to access copies of legislation and some guidelines is available in the Basic Legal Requirements fact sheet *Resource List for Legal Matters*, from *Community Action on Air Quality - Background Materials for Community Involvement in Air Quality Monitoring and Enforcement*.
- *Environmental Protection and Enhancement Act*, S.A. 1992, c.E-13.3.

This Act sets out broad requirements for reporting releases into the environment, including releases of air pollutants. It also provides for the public disclosure of monitoring data and the supporting information necessary to interpret it. It can be accessed on the Internet at <<http://www.gov.ab.ca/qp/acts.html>>.

- *Substance Release Regulation*, A.R. 124/93

This regulation provides limits for specified air emissions and sets out requirements related to visible emissions readings and certification of visible emissions observers. It can be accessed on the Internet at <<http://www.gov.ab.ca/qp/regs.html>>.

- *Alberta Ambient Air Quality Guidelines*

These guidelines, published by Alberta Environmental Protection, set levels for a number of substances for the ambient air in Alberta, including:

- sulfur dioxide,
- hydrogen sulfide,
- nitrogen dioxide,
- carbon monoxide,
- ground level ozone,
- suspended particulates,
- dustfall,
- coefficient of haze (dust and smoke),
- ammonia,
- static total sulfation,

- static hydrogen sulfide, and
- static fluorides.

A fact sheet on these guidelines can be accessed on the Internet at <http://www.gov.ab.ca/env/dept/facts/airqual.html>. Print copies of the fact sheet can be obtained from:

Alberta Environmental Protection
Information Centre
Main Floor, 9920 – 108 Street
Edmonton, AB T5K 2M4
Phone: (780) 427-2079 (toll-free in Alberta by calling 310-0000)
Fax: (780) 427-4407
E-mail: infocent@env.gov.ab.ca

- <http://www.gov.ab.ca/env/air/airqual/iqua.html>

This Internet site provides access to an Alberta Environmental Protection fact sheet about the Index of Quality of Air, a means of measuring ambient air quality in Alberta. Print copies of this fact sheet can be obtained from Alberta Environmental Protection's Information Centre (contact information above). Print copies can also be ordered through the Internet at <http://www.gov.ab.ca/env/info/infocentre/order.html>. When ordering, quote order number 619-E-13.

- <http://www.gov.ab.ca/env/air/airqual/quart.html>

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- <http://www.gov.ab.ca/env/air/airqual/annual.html>

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- <<http://www.gov.ab.ca/env/air/airqual/special.html>>

This Internet site provides access to reports on special air quality surveys carried out by Alberta Environmental Protection. These are air monitoring activities carried out by the department in addition to its regular monitoring activities. Print copies of these reports can be obtained from Alberta Environmental Protection's Information Centre (contact information above). Print copies of these reports can also be ordered through the Internet; see <<http://www.gov.ab.ca/env/info/infocentre/pubair.html>> for order numbers for specific reports and for access to the electronic order form.

- <<http://www.gov.ab.ca/env/dept/facts/airqualt.html>>

This site gives access to a fact sheet about the *Alberta Ambient Air Quality Guidelines*. Print copies of this fact sheet are also available from Alberta Environmental Protection's Information Centre (contact information above).

Air Quality

Monitoring

RESOURCE LIST FOR AIR QUALITY MONITORING

NOTE: all references are current to February 1999. Please update your information to the date that this material is being used. For suggestions on updating these materials, please see the Introduction for Community Action on Air Quality – Background Materials for Community Involvement in Air Quality Monitoring and Enforcement (“A word of caution about your use of the Community Action on Air Quality package”).

For more information about air quality monitoring, check the following sources.

Alberta Environmental Protection

- The Enforcement and Monitoring Division of Alberta Environmental Protection deals with environmental enforcement and monitoring matters on a province-wide basis, and coordinates the department’s activities related to source and ambient air monitoring. This division can be contacted at:

Alberta Environmental Protection
Enforcement and Monitoring Division
11th Floor, 9820 – 106 Street
Edmonton, AB T5K 2J6
Phone: (780) 422-2560 (toll-free in Alberta by calling 310-0000)
Fax: (780) 427-3178

- Alberta Environmental Protection has six regional offices for different areas of the province. These regions are responsible for enforcement and monitoring matters at the regional level, and carry out the department’s source monitoring program. The regions have staff designated to deal with enforcement and monitoring. To determine the region in which your community is located, contact the regional office closest to your community. The contact information for the regions is listed below, and is also available on the Internet through <<http://www.gov.ab.ca/env/info/infocentre/alberta.html>>.

Alberta Environmental Protection
Northwest Boreal Region
306, 3rd Floor, Provincial Building
9621 – 96 Avenue, Bag 900-31
Peace River, AB T8S 1T4
Phone: (780) 624-6402 (toll-free in Alberta by calling 310-0000)
Fax: (780) 624-6542

Alberta Environmental Protection
Northeast Boreal Region
4th Floor, 9820 – 106 Street
Edmonton, AB T5K 2J6
Phone: (780) 427-7617 (toll-free in Alberta by calling 310-0000)
Fax: (780) 422-4192

Alberta Environmental Protection
Northern East Slopes Region
107, 111 – 54 Street
Edson, AB T7E 1T2
Phone (780) 723-8390 (toll-free in Alberta by calling 310-0000)
Fax: (780) 723-8542

Alberta Environmental Protection
Parkland Region
3rd Floor, Provincial Building
4920 – 51 Street
Red Deer, AB T4N 6K8
Phone: (403) 340-4881 (toll-free in Alberta by calling 310-0000)
Fax: (403) 340-5173

Alberta Environmental Protection
Bow Region
Room 303, 2938 – 11 Street N.E.
Calgary, AB T2E 7L7
Phone: (403) 297-5959 (toll-free in Alberta by calling 310-0000)
Fax: (403) 297-6069

Alberta Environmental Protection
Prairie Region
245 Provincial Building
200 – 5th Avenue South
Lethbridge, AB T1J 4L1
Phone: (403) 381-5322 (toll-free in Alberta by calling 310-0000)
Fax: (403) 382-4008

- Alberta Environmental Protection maintains telephone numbers in Edmonton and Calgary through which it provides current information on air quality conditions. In Edmonton, call 427-7273 and in Calgary, call 250-2099. Both numbers can be reached toll-free within Alberta by calling 310-0000.

Clean Air Strategic Alliance (CASA)

- CASA is a non-profit, multi-stakeholder body that carries out strategic management of air quality in Alberta. It is made up of a Board of Directors representing various stakeholders and project teams that address specific air quality issues. CASA has a wide range of information on air quality matters specific to Alberta, including monitoring information. CASA can be contacted at:

9th Floor, 9940 – 106 Street
Edmonton, AB T5K 2N2
Phone: (780) 427-9793
Fax: (780) 422-3127
E-mail: casa@casahome.org
<<http://www.casahome.org>>

- CASA's website, at <<http://www.casahome.org>>, is a good source of information about Alberta air quality, including monitoring. The site provides information about CASA's projects, including information on the Ambient Monitoring Project at <<http://www.casahome.org/amp.htm>>. Print information on the Ambient Monitoring Project can also be obtained from CASA.
- The Fall 1997 issue of the CASA newsletter *Clean Air Views* (Vol. 6, Issue 2) contains a number of articles related to air quality monitoring in Alberta, including articles about the ambient air monitoring network in Alberta and Alberta Environmental Protection's Mobile Air Monitoring Laboratory. Copies of this issue can be obtained from CASA.
- CASA maintains a second website that provides air quality and ecological data for Alberta, known as the Alberta Ambient Air Data Management System (AAADMS). Air monitoring data from the provincial ambient air monitoring network is directed to this location and can be accessed in a number of different formats. This user-friendly site can be accessed at <<http://www.casadata.org>> or through the "CASA Data Warehouse" link on the main CASA website at <<http://www.casahome.org>>.
- There are three existing airshed management zones that have been established under CASA. Airshed management zones are established to deal with air quality issues in a specific region. This includes carrying out air quality monitoring for the region. The existing airshed management zones are the West Central Airshed Society, which covers west central Alberta, the Parkland Airshed Management Zone, which covers central Alberta directly south of the West Central zone, and the Southern Wood Buffalo zone, which covers the northeastern area of Alberta, including the Fort McMurray and Fort McKay areas. Information about the monitoring activities and data of these zones can be obtained through the CASA website at <<http://www.casahome.org/zones.htm>>, or by contacting the zones directly as follows:

West Central Airshed Society
P.O. Box 6360
Drayton Valley, AB T7A 1R8
<<http://www.casahome.org/wcas.htm>>

Parkland Airshed Management Zone
P.O. Box 299
Sundre, AB T0X 1X0
Phone: (403) 638-2631
Fax: (403) 335-9207
e-mail: casa@casahome.org
<<http://www.casahome.org/pamz.htm>>

Southern Wood Buffalo Zone
c/o Wood Buffalo Environmental Association
Box 5567
Fort McMurray, AB T9H 3G5
e-mail: airmon@telusplanet.net
<<http://www.wbea.org>>
<<http://www.casahome.org/raqcc.htm>>

Legislation and guidelines

- Please note that information on how to access copies of legislation and some guidelines is available in the Basic Legal Requirements fact sheet *Resource List for Legal Matters*, from *Community Action on Air Quality - Background Materials for Community Involvement in Air Quality Monitoring and Enforcement*.
- *Environmental Protection and Enhancement Act*, S.A. 1992, c.E-13.3.

This Act sets out broad requirements for reporting releases into the environment, including releases of air pollutants. It also provides for the public disclosure of monitoring data and the supporting information necessary to interpret it. It can be accessed on the Internet at <<http://www.gov.ab.ca/qp/acts.html>>.

- *Release Reporting Regulation*, A.R. 117/93

This regulation provides the details about the types of releases that must be reported under the *Environmental Protection and Enhancement Act* and the requirements for providing written release reports. It can be accessed on the Internet at <<http://www.gov.ab.ca/qp/regs.html>>.

- *Release Reporting Guideline*

This guideline, published by Alberta Environmental Protection, elaborates on the *Release Reporting Regulation* by providing greater detail on the types of releases and amounts of released substances that are reportable under that regulation. This guideline can be obtained from:

Alberta Environmental Protection
Information Centre
Main Floor, 9920 – 108 Street
Edmonton, AB T5K 2M4
Phone: (780) 427-2079 (toll-free in Alberta by calling 310-0000)
Fax: (780) 427-4407
E-mail: infocent@env.gov.ab.ca

This guideline can also be ordered through the Internet at <http://www.gov.ab.ca/env/info/infocentre/order.html>. When ordering, quote order number 787-F.

- *Disclosure of Information Regulation*, A.R. 116/93

This regulation sets out the process for accessing information that is publicly available under the *Environmental Protection and Enhancement Act*, including monitoring data and supporting information. It can be accessed on the Internet at <http://www.gov.ab.ca/qp/regs.html>.

- *Substance Release Regulation*, A.R. 124/93

This regulation provides limits for specified air emissions and sets out requirements related to visible emissions readings and certification of visible emissions observers. It can be accessed on the Internet at <http://www.gov.ab.ca/qp/regs.html>.

- *Alberta Stack Sampling Code*, Publication Number REF. 89, ISBN 0773214062

This code, published by Alberta Environmental Protection, sets out procedures for sampling and analysis of air emissions from industrial sources in Alberta, namely stacks. It includes general requirements for stack sampling and analysis of samples, and specifies a number of methods for sampling and analysis in relation to different types of emissions and circumstances. This code can be purchased for \$49.95 from the Queen's Printer bookstores, listed below, or through the Queen's Printer site on the Internet at <http://www.gov.ab.ca/qp>.

Queen's Printer Bookstore
11510 Kingsway Avenue
Edmonton, AB T5G 2Y5
Phone: (780) 427-4952 (toll-free in Alberta by calling 310-0000)
Fax: (780) 452-0668

Queen's Printer Bookstore
Main Floor, McDougall Centre
455 – 6 Street S.W.
Calgary, AB T2P 4E8
Phone: (403) 297-6251 (toll-free in Alberta by calling 310-0000)
Fax: (403) 297-8450

This code can also be accessed at:

Alberta Environmental Protection
Library
6th floor, 9920 – 108 Street
Edmonton, AB T5K 2M4
Phone: (780) 427-5870 (toll-free in Alberta by calling 310-0000)
Fax: (780) 422-0170
E-mail: library@env.gov.ab.ca
<<http://www.augustana.ab.ca/neos/neosevp.htm>>

- *Continuous Emission Monitoring System Code*

This code, published by Alberta Environmental Protection, deals with all major elements of continuous emission monitoring systems, and sets criteria for these systems for design, installation, operations, performance, and quality assurance and control. This code can be obtained from:

Alberta Environmental Protection
Information Centre
Main Floor, 9920 – 108 Street
Edmonton, AB T5K 2M4
Phone: (780) 427-2079 (toll-free in Alberta by calling 310-0000)
Fax: (780) 427-4407
E-mail: infocent@env.gov.ab.ca

This code can also be ordered through the Internet at
<<http://www.gov.ab.ca/env/info/infocentre/order.html>>. When ordering, quote order number 758-F.

- *Air Monitoring Directive*

This guideline, published by Alberta Environmental Protection, sets out requirements for carrying out source and ambient air monitoring and reporting monitoring results, and includes specific requirements for a number of different industries. There are requirements for both continuous and static ambient monitoring. The guideline also establishes requirements for monthly and annual reports, contravention reports, and release reporting. This guideline can be accessed at:

Alberta Environmental Protection
Library
6th floor, 9920 – 108 Street
Edmonton, AB T5K 2M4
Phone: (780) 427-5870 (toll-free in Alberta by calling 310-0000)
Fax: (780) 422-0170
E-mail: library@env.gov.ab.ca
<<http://www.augustana.ab.ca/neos/neosevp.htm>>

- *Manual for Training and Certification of Observers and Evaluation of Visible Emissions*, Publication VEE-2/77

This document, published by Alberta Environmental Protection, is the manual specified by the *Substance Release Regulation* for training and certification of visible emissions observers who may determine the opacity of visible emissions. Observers use this manual, together with a training course, to train in making field evaluations of the opacity of visible emissions and in observing and properly recording all relevant information. The manual also establishes the requirements for certification of observers.

- *Alberta Ambient Air Quality Guidelines*

These guidelines, published by Alberta Environmental Protection, set levels for a number of substances for the ambient air in Alberta, including:

- sulfur dioxide,
- hydrogen sulfide,
- nitrogen dioxide,
- carbon monoxide,
- ground level ozone,
- suspended particulates,
- dustfall,
- coefficient of haze (dust and smoke),
- ammonia,
- static total sulfation,
- static hydrogen sulfide, and
- static fluorides.

A fact sheet on these guidelines can be accessed on the Internet at <http://www.gov.ab.ca/env/dept/facts/airqual.html>. Print copies of the fact sheet can be obtained from:

Alberta Environmental Protection
Information Centre
Main Floor, 9920 – 108 Street
Edmonton, AB T5K 2M4
Phone: (780) 427-2079 (toll-free in Alberta by calling 310-0000)
Fax: (780) 427-4407
E-mail: infocent@env.gov.ab.ca

Internet sites

- <http://www.gov.ab.ca/env/air/airqual/monitor.html>

This site provides general information about air quality monitoring activities carried out by Alberta Environmental Protection.

- <http://www.gov.ab.ca/env/air/airqual/contin.html>

This site provides information about and the locations of the ambient air monitoring stations operated by Alberta Environmental Protection that carry out continuous monitoring.

- <<http://www.gov.ab.ca/env/air/airqual/inter.html>>

This site provides information about and the locations of the ambient air monitoring stations operated by Alberta Environmental Protection that carry out intermittent monitoring.

- <<http://www.gov.ab.ca/env/air/airqual/iqua.html>>

This site provides access to an Alberta Environmental Protection fact sheet about the Index of Quality of Air, a means of measuring ambient air quality in Alberta. Print copies of this fact sheet can be obtained from:

Alberta Environmental Protection
Information Centre
Main Floor, 9920 – 108 Street
Edmonton, AB T5K 2M4
Phone: (780) 427-2079 (toll-free in Alberta by calling 310-0000)
Fax: (780) 427-4407
E-mail: infocent@env.gov.ab.ca

Print copies can also be ordered through the Internet at <<http://www.gov.ab.ca/env/info/infocentre/order.html>>. When ordering, quote order number 619-E-13.

- <<http://www.gov.ab.ca/env/air/airqual/maml.html>>

This site provides access to a fact sheet about Alberta Environmental Protection's Mobile Air Monitoring Laboratory. Print copies of this fact sheet can be obtained from Alberta Environmental Protection's Information Centre (contact information above).

- <<http://www.gov.ab.ca/env/air/airqual/quart.html>>

This site provides access to quarterly reports on ambient air monitoring carried out by Alberta Environmental Protection. The earliest reporting time period that is accessible at this site is January-March 1997. Print copies of quarterly reports dating from April-June 1995 can be obtained from Alberta Environmental Protection's Information Centre (contact information above). Print copies of these reports can also be ordered through the Internet; see <<http://www.gov.ab.ca/env/info/infocentre/pubair.html>> for order numbers for specific reports and for access to the electronic order form.

- <<http://www.gov.ab.ca/env/air/airqual/annual.html>>

This site provides access to annual reports on ambient air quality monitoring carried out by Alberta Environmental Protection. Currently, reports for 1994-1996 are available. Print copies of these reports can be obtained from Alberta Environmental Protection's Information Centre (contact information above). Print copies of these reports can also be ordered through the Internet; see <<http://www.gov.ab.ca/env/info/infocentre/pubair.html>> for order numbers for specific reports and for access to the electronic order form.

- <<http://www.gov.ab.ca/env/air/airqual/special.html>>

This site provides access to reports on special air quality surveys carried out by Alberta Environmental Protection. These are air monitoring activities carried out by the department in addition to its regular monitoring activities. Print copies of these reports can be obtained from Alberta Environmental Protection's Information Centre (contact information above). Print copies of these reports can also be ordered through the Internet; see <<http://www.gov.ab.ca/env/info/infocentre/pubair.html>> for order numbers for specific reports and for access to the electronic order form.

- <<http://www.gov.ab.ca/env/dept/facts/compuls.html>>

This site gives access to the fact sheet *The Role of Compulsory Industry Monitoring in Alberta's Environmental Regulatory Program*. This fact sheet discusses monitoring that industry is required to carry out under the *Environmental Protection and Enhancement Act* and related legislation, including air quality monitoring. Print copies of this fact sheet are also available from Alberta Environmental Protection's Information Centre (contact information above).

- <<http://www.gov.ab.ca/env/dept/facts/airqualt.html>>

This site gives access to a fact sheet about the *Alberta Ambient Air Quality Guidelines*. Print copies of this fact sheet are also available from Alberta Environmental Protection's Information Centre (contact information above).

Basic

Legal Requirements

INTRODUCTION TO THE CANADIAN LEGAL SYSTEM

NOTE: all references, including statutes, regulations and particular section numbers, are current to February 1999. Please update your information to the date that this material is being used. For suggestions on updating these materials, please see the Introduction for Community Action on Air Quality – Background Materials for Community Involvement in Air Quality Monitoring and Enforcement (“A word of caution about your use of the Community Action on Air Quality package”).

Where do our laws come from?

Current Canadian law comes from a number of sources. One way of distinguishing between types of Canadian law is to compare common law, also known as case law, and statute law.

Common law

Common law is the case law that is created by judges making decisions in legal matters. Common law originated in England and was made applicable in all areas of Canada, other than Quebec, with the adoption of the English legal system when Canada was formed as a country in 1867. The civil law system, which was adopted from the French model, applies in the province of Quebec.

The concept of precedent is key to understanding the common law. This concept means that Canadian courts are required to follow previous related decisions, referred to as principles, made by a court at the same level or a higher level when reaching a judgment on a matter before it. This concept is intended to ensure consistency in the application of the law by all courts.

Decisions made by courts can modify existing principles established by the common law. However, new principles in law or significant changes to precedent must be made by the enactment of a new law, known as a statute, by the federal Parliament or a provincial legislature.

Statute law

Statutes are also known as Acts. Statutes are called primary legislation because they are laws made by the elected representatives in the federal Parliament or a provincial legislature. The federal and provincial governments get their law-making authority from the *Constitution Act, 1867*, which created Canada as a country. The matters that each level of government can regulate by making laws are set out in sections 91 and 92 of that Act. Statutes are often passed to modify, change or reform the common law, or to deal with matters not addressed by the common law. If a statute changes the common law, the common law will no longer apply as law on that subject area.

Statutes establish the framework for regulating a subject area. They set out the basic rules and requirements, as well as the powers of government and its officials in this subject area, including the power to make regulations. Regulations are a subset of statute law and are discussed in greater detail below.

How are statutes made?

Who makes statutes?

In Canada, both the federal and provincial levels of government make (enact) statutes. Federal laws are made by Parliament, which consists of the House of Commons and the Senate. The House of Commons is made up of all federally elected representatives, also known as Members of Parliament (MP's). The Senate is made up of regional representatives, known as senators, who are appointed by the Prime Minister. Both the House of Commons and the Senate must pass a statute into law, but the legislative process generally begins in the House of Commons.

Provincial laws are made by the legislature of a particular province; for example, in Alberta, the Legislative Assembly makes provincial laws. The Legislative Assembly of Alberta is made up of all provincially elected representatives, also known as Members of the Legislative Assembly (MLA's). The law-making process is similar for both the federal and provincial levels of government; however, all provincial legislatures are made up of only the assembly of elected representatives. There are no provincial senates.

The provincial process

The provincial process begins with the introduction of a bill, which is a draft version of a proposed law, into the Legislative Assembly. Each bill must pass through three readings, or votes of the members of the Legislative Assembly, before it can become law. First reading usually occurs when the bill is introduced. After first reading, a committee of members of the Legislative Assembly often reviews the bill in detail. This is generally the stage at which amendments, or changes, will be suggested for the bill. At the second reading stage, there will be debate and discussion of the bill by the Legislative Assembly as a whole. At third reading, the bill and any proposed amendments to it are considered by the entire Legislative Assembly.

Once a bill has passed the three readings, it is signed by the Lieutenant Governor. This is referred to as “royal assent” and gives the statute legal effect. Statutes most commonly come into effect at the time of royal assent, but their application can be delayed by including a specific provision in the statute. Such a provision may state a specific future date when the statute will come into effect or state that the statute will come into effect “upon proclamation”, which allows the government to choose when the statute will come into effect.

The federal process

The federal law-making process is similar to the provincial process. The major difference is that bills must be passed through three readings of both the House of Commons and the Senate before they can be given royal assent. At the federal level, royal assent is given by the Governor General. While bills generally begin the legislative process in the House of Commons, all bills other than money bills can also originate from the Senate.

Regulations

Regulations provide the details of a legislative scheme and flesh out the framework provided by the statute. The statute will list the powers to make regulations, the person or body who may make the regulations, and the subject areas or topics that can be covered by regulations. Regulations that do not comply with the statute enabling their creation are illegal.

Regulations are called subordinate legislation because they are made by a person or body other than Parliament or the Legislative Assembly; for example, Cabinet or a cabinet minister. Cabinet is the group of elected representatives who have been selected to oversee the administration and operation of government departments. Individual members of Cabinet are referred to as cabinet ministers. Regulations are called either orders in council, when they are made by Cabinet (federal: Governor General in Council; provincial: Lieutenant Governor in Council), or ministerial orders, when made by a cabinet minister. Statutes may also give powers to certain regulatory bodies or agencies (for example, the Energy and Utilities Board) to make regulations.

Regulations are not subject to the same process of scrutiny by the Legislative Assembly or Parliament in their enactment, and are not required to be made public until they have been enacted. In recent years, some government departments have begun to seek public input as part of the regulation-making process; however, this is not mandatory unless required as part of the statute granting the power to make the regulations.

Policy

There are also documents that may resemble statutes or regulations, but that do not have the same legal effect. These are often referred to as guidelines or policy. Other terms that may be used to refer to these types of documents include “standards”, “objectives” or “criteria”. Guidelines are usually written documents that provide further detail beyond that found in a

regulation. A guideline may set standards, levels or procedures or deal with other technical matters.

Guidelines are often developed by government (usually civil servants), but may also be developed by other bodies such as technical or scientific groups (for example, the Canadian Standards Association) or policy development groups (for example, the Canadian Council of Ministers of the Environment). Policy that is related to statutes and regulations is usually developed by government, and may or may not be written or documented in some way. Policy can be explained as the details of *how* government will interpret, administer and enforce statutes and regulations.

Law versus policy

A key distinction between statutes and regulations as compared to guidelines and policy is that statutes and regulations are legally enforceable when properly enacted. They are enacted and made publicly available in a prescribed manner, ensuring that the requirements imposed by them can be determined by those being regulated. Guidelines and policy generally are *not* legally enforceable due to the informal way in which they are created and the lack of consistency regarding public availability and accessibility. Guidelines can be made legally enforceable in certain circumstances by specifically incorporating them as part of a statute or regulation. Guidelines are most commonly incorporated into regulations, and must be referred to in the regulation in a specific manner to ensure that they are legally enforceable.

Power to make environmental laws

As mentioned above, both the federal and provincial governments have powers given to them by the *Constitution Act, 1867* to make laws. The specific matters over which the federal and provincial governments have exclusive law-making authority are set out in sections 91-92 of that Act. In general, the federal government is given power to legislate and regulate matters of national and international scope under section 91, and the provinces are given powers to deal with matters of a local or private nature under section 92.

Given the division of law-making powers under the *Constitution Act, 1867*, it may not be immediately apparent how both the federal and provincial governments may make environmental legislation. However, in 1867 matters of environmental protection and regulation were not a concern, and these matters have only become a concern over the past few decades. As a result, governments seeking to enact environmental laws must look to other subject matters listed in sections 91-92 of the *Constitution Act, 1867* for their authority to enact such legislation. The development of constitutional law related to environmental legislation has resulted in the federal and provincial governments both having power to enact environmental laws, as the environment has proven to be too broad a matter to be contained exclusively in either section 91 or 92.

The Canadian court system

The courts in Canada interpret and determine the application of both statute law and common law to matters that come before them. Dependent on the matter before them, the courts may make orders, direct punishment or the payment of money damages, and make determinations about the rights of parties before them.

There are two court systems in Canada. The provincial court system operates within each province and may vary in structure from province to province. In Alberta, the court system includes, by increasing level of authority, the Provincial Court, the Court of Queen's Bench and the Court of Appeal. Each of these courts may deal with both criminal and civil matters and, subject to the courts' procedural rules, decisions may be appealed from a lower court to the higher courts.

The federal court system includes the Federal Court Trial Division and the Federal Court of Appeal. This court system deals with matters where legal relief or remedies are claimed against the federal government, including federal boards and agencies; for example, income tax matters or challenges to decisions made by a federal cabinet minister. The Supreme Court of Canada is the final court of appeal for both the provincial and federal court systems, and its decisions are binding on all courts in Canada.

For more information

For further information about the Canadian legal system and the law-making powers of the federal and provincial governments, check the following sources.

- "Natural Resource and Environmental Management: A Jurisdictional Primer", by Alistair R. Lucas, in *Environmental Protection and the Canadian Constitution* (Environmental Law Centre, Edmonton, 1987), pp.31-43.

This article explains the division of law-making powers between the federal and provincial governments under the *Constitution Act, 1867*, and how both levels of government have authority to make laws related to environmental matters.

The book containing this article can be found at the Environmental Law Centre library (contact information below).

Environmental Law Centre
 204, 10709 Jasper Avenue
 Edmonton, AB T5J 3N3
 Phone: (780) 424-5099; 1-800-661-4238 (toll-free Alberta)
 Fax: (780) 424-5133
 E-mail: elc@elc.ab.ca
 <<http://www.elc.ab.ca/services/library2.html>>

- <<http://www.acjnet.org>>

The ACJNet (Access to Justice Network) Internet site is an excellent source for a broad range of legal information. It includes links to a variety of law-related sites.

- <<http://www.extension.ualberta.ca/legalfaq>>

This Internet site, titled Canadian Legal FAQs, provides answers to commonly asked questions about Canadian law and the Canadian legal system. For information about federal and provincial law-making powers under the Canadian constitution, see <<http://www.extension.ualberta.ca/legalfaq/nat/cons.htm>>.

Basic

Legal Requirements

STATUTES AND REGULATIONS

NOTE: all references in this material are current to February 1999. Please update your information to the date that this material is being used. For suggestions on updating these materials, please see the Introduction for Community Action on Air Quality – Background Materials for Community Involvement in Air Quality Monitoring and Enforcement (“A word of caution about your use of the Community Action on Air Quality package”).

How to find statutes (Canada and Alberta)

Print versions

Statutes are often found in a consolidated version, called revised statutes. Revised statutes update all statutes of the federal government or a province to a particular date (e.g., *Revised Statutes of Canada 1985*; *Revised Statutes of Alberta 1980*). A statute in a consolidation (revised statutes) replaces all prior versions of the same statute. There are also annual or sessional statutes, which are published in volumes grouped by calendar year or by legislative session.

It is now quite common to find loose-leaf (binder) versions of statutes, which are updated on an ongoing basis. This means that amendments to statutes are incorporated as they are enacted. It should be noted that in Alberta, this is done for convenience, and where a statute is referred to for legal purposes such as litigation, the original statute and any amendments enacted through the annual or sessional volumes should be referred to.

Amendments to federal statutes are listed in the Table of Public Statutes in the *Canada Gazette, Part III*. Amendments to Alberta statutes are listed in the Table of Public Statutes, found in the "Supplement" volume of the loose-leaf version of the *Statutes of Alberta*.

Electronic versions

Internet versions of statutes are generally similar to loose-leaf versions, as they are updated on an ongoing basis and are “unofficial” (i.e., they cannot be relied on for legal purposes as the official versions can). Federal statutes are available at <http://canada.justice.gc.ca/Loireg/index_en.html>. Provincial statutes are available at <<http://www.gov.ab.ca/qp/index.html>> Both federal and

provincial statutes can also be accessed through database services such as QuickLaw. CD-ROMs that provide access to both sets of statutes are also available. The advantage of these computerized versions is that specific sections or terms can be searched for by the computer, often saving considerable amounts of time.

How to refer to statutes

In referring to statutes, both federal and Alberta statutes are numbered on an alphanumeric basis, using letters and numbers. The letter in the reference relates to the first word in the short title of the statute, with statutes arranged alphabetically and then numbered consequentially under the particular letter of the alphabet.

Examples:

Environmental Protection and Enhancement Act, S.A. 1992, c. E-13.3

- S.A. 1992 stands for *Statutes of Alberta, 1992* (you may also see R.S.A. in a statute reference, which stands for Revised Statutes of Alberta)
- c. stands for chapter
- E-13.3 is the chapter number

Fisheries Act, R.S.C. 1985, c. F-14

- R.S.C. 1985 stands for *Revised Statutes of Canada, 1985*
- c. F-14 means chapter F-14

*NOTE: The *Canadian Environmental Protection Act* is an exception to the alphanumeric numbering system, due to the timing of its enactment and its location in the *Statutes of Canada*. This statute's reference is *Revised Statutes of Canada 1985*, chapter 16 (4th Supplement), which means that it is found in a fourth supplement volume to the main volumes of the *Revised Statutes of Canada 1985*.

How to find regulations (Canada and Alberta)

Print versions

Regulations are enacted under the authority of a particular statute, and are sometimes referred to as subordinate legislation. Federal regulations were last consolidated in the *Consolidated Regulations of Canada 1978* (CRC 1978). Regulations that have been enacted since that time can be found in the *Canada Gazette, Part II*. The *Canada Gazette, Part II* also includes a quarterly index of statutory instruments (regulations).

There is no consolidation of Alberta regulations. Regulations are published in the *Alberta Gazette*. They are also compiled into volumes on an annual basis, and these volumes include a table listing amendments to regulations.

Electronic versions

Computerized versions of regulations are also available on the Internet or CD-ROM, and are generally updated to include amendments on an ongoing or regular basis. As with statutes, the computerized versions of regulations are more efficient for search purposes, but are also unofficial unless stated otherwise. Regulations are available through the Internet at the sites provided above.

How to refer to regulations

Federal and Alberta regulations are referred to and numbered in a similar manner. The numbering of federal regulations includes the year the regulation was enacted and a regulation number.

Example:

Vinyl Chloride Release Regulations, 1992, SOR/92-631

- SOR means statutory orders and regulations, and indicates that this document is a federal regulation.
- 92 refers to the year the regulation was enacted (1992).
- 631 is the regulation number assigned to that regulation when it was enacted.

The numbering of Alberta regulations also includes the year the regulation was enacted and the regulation number.

Example:

Substance Release Regulation, A.R. 124/93

- A.R. means Alberta Regulation
- 124 is the regulation number assigned to that regulation when it was enacted.
- 93 refers to the year the regulation was enacted (1993).

Tips on how to read statutes and regulations

Helpful tools

Be sure to use the tools that may be included for assistance, such as tables of contents, headings and marginal notes. Tables of contents are not included in all statutes and regulations. However, where they are included, they may be of assistance in finding a particular section or subject area. Headings will often be used to indicate the subject matter of different parts of a statute or regulation.

Marginal notes are found in small print in the margin next to the start of a section, and indicate the subject matter of that section. Keep in mind that schedules to statutes and regulations are part of that legislation, and may be relevant to your interests and research.

Definitions

Definitions are an important part of any statute or regulation. Words or phrases that have a commonly understood meaning in everyday language may be given a totally different meaning in a statute or regulation. Generally, definitions of terms that are used throughout a statute or regulation are found in the early sections of the legislation, often in section 1 or 2. However, definitions that apply to a particular part or sections of a statute or regulation may be found in the early sections of that part or group of sections instead.

Enabling powers

The powers given in a statute to make regulations are referred to as enabling powers. These may be found in sections near the end of the statute or at the end of particular parts of a statute. Sections setting out enabling powers are generally worded: "The Minister/Governor in Council/Lieutenant Governor in Council may make regulations prescribing/related to..."

Offences

Statutes and regulations may also contain sections creating offences under the legislation. Often these sections are located near the end of the statute or regulation, or at the end of a particular part of a statute or regulation. Offence provisions usually are worded to indicate *who* might commit the offence ("a person who..." or "any person who..."), and *what action* (or inaction) would constitute the offence ("does/fails to do something is guilty of an offence"). Often offence provisions will also indicate the penalty attached to the offence. Penalty provisions may also follow the offences in a separate section, particularly if the offence section contains a lengthy list of offences.

Interpretation of statutes and regulations

Statutes are often worded using broad terms that can sometimes be subject to different interpretations. What often happens is that a person may be charged with an offence that could be interpreted in two or more ways, and that person will challenge the charge on that basis. When this happens, it is up to a court to decide the correct meaning of the statute, or to hold it invalid if it is too vague. Courts are often guided in this task by an Interpretation Act, as well as by certain long-standing legal rules. Judges can also consider the debates in Parliament or the provincial legislature to get an idea of what the drafters of the statute were trying to achieve. These combined factors can lead to statutes being given a meaning that is not always the most obvious. It is thus important to look up how the statute has been interpreted.

Regulations are not usually subject to the same kind of review by courts, but they are often accompanied by interpretive aids such as guidelines or policy manuals. A good tactic in trying

to determine the interpretation of a regulation is to contact the appropriate government department, which will have any interpretive aids that exist or may be able to give an idea of the likely interpretation.

Where to find statutes and regulations

Statutes and regulations are public documents, and as such are available from a number of sources, such as:

- the Environmental Law Centre;
- provincial courthouses (arrangements may have to be made beforehand in some smaller centres);
- law school libraries (Universities of Alberta and Calgary);
- the Legislature library in Edmonton;
- the Alberta Environmental Protection library;
- the Internet; and
- public libraries (although sometimes these are not as current as they could be).

The Queen's Printer, a provincial government office, also offers copies of individual provincial acts or regulations for sale. You may also be able to purchase or order statutes or regulations from your local bookstore.

No matter where you decide to go for information, don't be afraid to ask the librarians for some direction if you are stuck. Some libraries employ research librarians who may be able to help you or lead you to the right source.

For more information

For further information about locating statutes and regulations, check the following sources.

Libraries

Environmental Law Centre
204, 10709 Jasper Avenue
Edmonton, AB T5J 3N3
Phone: (780) 424-5099; 1-800-661-4238 (Alberta only)
Fax: (780) 424-5133
E-mail: elc@elc.ab.ca

LEGAL REQUIREMENTS **Statutes & Regulations**

<<http://www.elc.ab.ca/services/library2.html>>

The Centre will fax and mail materials outside of Edmonton.

Alberta Environmental Protection library

6th floor, 9920 – 108 Street

Edmonton, AB T5K 2M4

Phone: (780) 422-5870 (toll-free in Alberta by calling 310-0000)

Fax: (780) 422-0170

E-mail: library@env.gov.ab.ca

<<http://www.augustana.ab.ca/neos/neosevp.htm>>

This library has Alberta statutes and regulations, and guidelines related to environmental legislation

University of Alberta, Faculty of Law

John A. Weir Memorial Law Library

2nd floor, Law Centre

University of Alberta

Edmonton, AB T6G 2H5

Phone: (780) 492-3371

<http://www.library.ualberta.ca/library_html/libraries/law.html>

University of Calgary, Faculty of Law

Law Library

2nd floor, Murray Fraser Hall

2500 University Drive NW

Calgary, AB T2N 1N4

Phone: (403) 220-3727 (general information/circulation); (403) 220-7274

(reference assistance)

Fax: (403) 282-3000

<<http://www.acs.ucalgary.ca/~sanders>>

Legislature Library

216 Legislature Building

10800 – 97 Avenue

Edmonton, AB T5K 2B6

Phone: (780) 427-2473 (toll-free in Alberta by calling 310-0000)

Law Society Library

2nd floor, Law Courts

1A Sir Winston Churchill Square

Edmonton, AB T5J 0R2

Phone: (780) 422-2343

Law Society Library
 7th floor, Court House
 611 – 4 Street SW
 Calgary, AB T2P 1T5
 Phone: (403) 297-7475

Law Society Library
 Court House, 320 – 4 Street S.
 Lethbridge, AB T1J 4C7
 Phone: (403) 381-5639

Law Society Library
 Court House, 4909 – 48 Avenue
 Red Deer, AB T4N 3T5
 Phone: (403) 340-5499

Note: smaller centres with provincial courthouses may have small libraries; check the provincial government telephone listings in your local area.

Stores

The Queen's Printer Bookstores sell copies of Alberta statutes and regulations and also codes of practice made under the *Environmental Protection and Enhancement Act*. If you are located outside of Edmonton or Calgary, you may be able to buy copies of statutes and regulations through your local bookstore. You can order statutes and regulations, as well as some government publications, from the Queen's Printer Bookstores by fax or mail, or on-line through the Queen's Printer Internet site at <<http://www.gov.ab.ca/qp>>. The contact information for the Queen's Printer Bookstores is below:

Queen's Printer Bookstore
 11510 Kingsway Avenue
 Edmonton, AB T5G 2Y5
 Phone: (780) 427-4952 (toll-free in Alberta by calling 310-0000)
 Fax: (780) 452-0668

Queen's Printer Bookstore
 Main floor, McDougall Centre
 455 – 6 Street SW, Calgary, AB T2P 4E8
 Phone: (403) 297-6251 (toll-free in Alberta by calling 310-0000)
 Fax: (403) 297-8450

Internet sources

- <<http://www.gov.ab.ca/qp/index.html>>

This is the site for the Alberta Queen's Printer. At this location, you can obtain access to Alberta statutes and regulations by clicking on "legislation" within the text. You can then choose to find statutes or regulations.

- <http://founder.library.ualberta.ca/ftp/index_en.html>

LEGAL REQUIREMENTS **Statutes & Regulations**

This site gives access to federal statutes and regulations. The legislation at this site is apparently updated twice yearly.

- <http://canada.justice.gc.ca/Loireg/index_en.html>

This location provides access to federal statutes and regulations through the federal Department of Justice home page.

Basic

Legal Requirements

PROVINCIAL AND FEDERAL LEGISLATION APPLICABLE TO AIR QUALITY

NOTE: all references, including section numbers, statutes and regulations, are current to February 1999. Please update your information to the date that this material is being used. For suggestions on updating these materials, please see the Introduction for Community Action on Air Quality – Background Materials for Community Involvement in Air Quality Monitoring and Enforcement (“A word of caution about your use of the Community Action on Air Quality package”).

Overview of Alberta legislation

Environmental Protection and Enhancement Act

The main piece of environmental legislation in Alberta is the *Environmental Protection and Enhancement Act* (EPEA). This Act is intended to regulate matters that affect the environment, including substance releases, “activities” and all aspects of the environment related to those activities. The Schedule of Activities, found at the end of the Act, lists activities that may be regulated under the Act. These activities may be subject to the environmental assessment process and may require an approval under the Act.

Approvals and registrations

EPEA creates prohibitions against commencing or continuing an activity requiring an approval or registration without such an approval or registration. An approval is a document issued by the province allowing an operator to carry out a specific activity subject to certain operating conditions that are set out in the approval. A registration enables an operator to carry out a specific activity in accordance with the requirements of the relevant code of practice published by Alberta Environmental Protection.

The *Activities Designation Regulation* lists all activities required to obtain an approval or registration under EPEA. This regulation includes more specific descriptions of activities requiring approvals or registrations. In some instances, a large industrial operation may fall under the description of more than one activity listed in the regulation. However, only one

approval will be issued for the entire operation. The Director, a government official, may issue an approval subject to any terms or conditions that the Director considers appropriate.

Substance releases

Part 4, Division 1 of EPEA deals with substance releases, including those related to air quality matters. Section 97 prohibits substance releases in amounts, concentrations or levels in excess of those *expressly* set out by an approval or the regulations. If there is a conflict between an approval and the regulations regarding prescribed amounts, levels or concentrations, the strictest requirement applies. This prohibition is most relevant to regulated activities.

Section 98 EPEA prohibits substance releases that cause or may cause a significant adverse effect, where there is no applicable approval or regulations. It should be noted that this section provides that there may not be a conviction for releases that are authorized by another Alberta or federal law. Terms such as “substance”, “environment” and “adverse effect” are all defined in EPEA. Each of these terms is defined quite broadly to cover a wide range of circumstances. However, “significant adverse effect” is not defined in EPEA. Section 101 imposes a duty on the person responsible for the released substance to undertake remedial action and restore the environment. The term “person responsible” is defined in EPEA and has a very broad application.

Release reporting

EPEA creates a duty to report substance releases that are causing, have caused or may cause an adverse effect. Persons who cause releases, those who own or have control of released substances, and police officers and employees of local or other public authorities all have duties to report releases to the Director. Reporting must be done immediately upon discovery of the release. EPEA also sets out the details of reporting, including how it must be done and the information that must be provided. A written report may be required in addition to the oral report.

The *Release Reporting Regulation* sets out details about release reporting. It provides for exemptions and limitations on types of releases to be reported, some of which relate to classifications under the federal *Transportation of Dangerous Goods Regulation*. As well, the regulation provides greater details about written release reports, including timing of reports and information to be included. Alberta Environmental Protection has also developed a *Release Reporting Guideline*, which provides helpful details on reporting requirements.

Air-related releases - general

The *Substance Release Regulation* deals with substance releases into the environment, and focuses mainly on air-related releases. Part 1 deals with the maximum permissible opacity of visible emissions that are not covered by an approval, and sets out the requirements for determining the opacity of visible emissions. Generally, the maximum permissible opacity is 40% over a 6 minute time period. Part 2 regulates particulate releases to the environment and

prescribes maximum concentrations of particulates in effluent streams from sources to the ambient air.

Part 3 regulates gaseous emissions from vinyl chloride and polyvinyl chloride plants. These requirements mirror the requirements of the federal *Vinyl Chloride Release Regulations, 1992* regarding maximum concentrations of vinyl chloride that may be released from vinyl chloride and polyvinyl chloride plants. This Part also requires sampling and analysis to meet the same standard referred to in the federal regulation. As well, the Regulation sets out detailed requirements related to the control of fugitive emissions of vinyl chloride, and for source and ambient monitoring for vinyl chloride.

The Regulation also provides that the Director may, by written notice to an operator of an activity, require reports on a release of substances into the ambient air from an activity, and may specify requirements for sampling, monitoring, analysis, recording and reporting. Anything required by such a notice would be in addition to similar requirements set out in the operator's approval.

Specific air-related releases

The *Ozone-Depleting Substances Regulation* establishes a number of restrictions in relation to those ozone-depleting substances that are listed in its schedule. Section 2 prohibits the release of ozone-depleting substances into the ambient air, with limited exceptions. Section 3 prohibits the manufacture and sale of things containing ozone-depleting substances, again with limited exceptions. Sections 4-5 regulate the servicing of equipment containing ozone-depleting substances and the training of service persons.

Similar to the *Substance Release Regulation*, the Director is given the power to require a person responsible for an ozone-depleting substance to provide reports and to undertake sampling, analysis, recording and reporting in relation to a release of an ozone-depleting substance. The Director must do this by written notice to the person, and these requirements are in addition to any similar requirements set out in an approval.

Overview of federal legislation

Canadian Environmental Protection Act

The *Canadian Environmental Protection Act* (CEPA) deals with a number of environmental matters. Part II covers toxic substances and is the part of CEPA that is most relevant to the regulation of air quality.

National Pollutants Release Inventory

Environment Canada compiles the National Pollutants Release Inventory (NPRI) on an annual basis. The NPRI is a yearly inventory of releases and transfers of certain substances within Canada. CEPA gives the Minister of Environment powers to require persons to provide

information on potentially toxic substances. Since 1993, the Minister has used this authority to require industrial operators to provide the information that makes up the annual NPRI. Environment Canada compiles the NPRI information it receives, and publicly releases it in an annual NPRI summary report. NPRI information is also accessible on the Internet at <http://www.doe.ca/pdb/npri>.

It is important to note that there are certain thresholds that apply to the size of the operator who must report and the amounts of substances reportable under NPRI, thus NPRI information is not a picture of all releases of particular substances in Canada over the course of a year. For example, the 1997 NPRI notice published by the Minister of Environment restricted reporting to “facilit[ies] where, during 1997, employees worked a total of 20,000 hours or more, and manufactured, processed or otherwise used 10 tonnes or more of any substance listed in (the notice) at concentrations greater than or equal to one percent by weight.” As well, the NPRI notice provides that substances in amounts less than 10 tonnes are not required to be reported.

Regulation of toxic substances

CEPA gives the federal government powers to designate substances as toxic substances and develop regulations regarding those toxic substances. Designated toxic substances are listed in Schedule I to CEPA. Various regulations have been developed to regulate toxic substances; for example, those dealing with vinyl chloride, a toxic substance that affects air quality.

CEPA gives the federal government powers to enter into agreements with provinces addressing provincial laws that may be deemed equivalent to the toxic substances regulations made under CEPA. As well, the federal government may make regulations declaring that CEPA toxic substances regulations are inapplicable in provinces that have equivalent laws. This has occurred with respect to the application of Alberta laws to toxic substances, and will be discussed in further detail below.

Release of toxic substances

Part II of CEPA also deals with the release of toxic substances into the environment. In particular, it requires the reporting of releases or likely releases of toxic substances into the environment. Persons who own or have control of released toxic substances and persons who cause or contribute to releases must

- report the release or likely release to a federal inspector,
- take emergency measures in relation to the release or likely release, and
- notify persons who may be adversely affected by the release or likely release.

Federal inspectors are given the power to take emergency measures to deal with releases where the persons who are required take these steps fail to do so. The government is also given the power to recover costs incurred by it in taking these emergency measures.

Example of CEPA regulation of toxic substances: *Vinyl Chloride Release Regulations, 1992*

This regulation was enacted under CEPA to regulate releases of vinyl chloride from vinyl chloride and polyvinyl chloride plants. Vinyl chloride is designated as a toxic substance in Schedule I to CEPA. The regulation sets out maximum amounts of vinyl chloride that may be released into the atmosphere at certain stages of the industrial process. The maximum amounts are generally measured as a proportion of product produced.

The regulation imposes certain monitoring and reporting requirements on operators of vinyl chloride and polyvinyl chloride plants. Operators must also develop, submit to Environment Canada and implement plans for the control of fugitive emissions and the prevention of accidental releases. The regulation requires operators to keep copies of all plans and reports at the plant for a three year period and to make these documents available to an inspector upon request.

This regulation also creates an exemption for operators in relation to release reporting that is otherwise required under CEPA. Operators are not required to report when releases are under a specified quantity (generally 100 kilograms per day). However, where an operator must report under CEPA (i.e., if a release is above the specified quantity), a written report must also be provided to Environment Canada. As well, the regulation requires operators to carry out sampling and analysis in accordance with a specified Environment Canada guideline.

An Agreement on the Equivalency of Federal and Alberta Regulations for the Control of Toxic Substances in Alberta

This agreement is an agreement between the federal and Alberta governments declaring Alberta laws, and especially the *Environmental Protection and Enhancement Act*, to be equivalent to specified CEPA regulations that are listed in Annex 1 to the agreement. Included in Annex 1 is the entire *Vinyl Chloride Release Regulations, 1992*. The agreement sets out elements that indicate equivalency between the CEPA regulations and Alberta laws:

- equivalent standards,
- similar provisions related to citizens' requests for investigations, and
- equivalent penalties and enforcement policies.

Under the agreement, Alberta agrees that provisions of the *Environmental Protection and Enhancement Act*, and approvals issued under that Act, will not contain lesser standards, measurements and testing methods than those provided for in the CEPA regulations. The agreement also provides for information sharing between the two governments, and specifies that Alberta will provide Canada with copies of approvals issued that contain standards relevant to the CEPA regulations. The agreement provides that either Canada or Alberta may terminate it with 6 months' notice.

Alberta Equivalency Order

The *Alberta Equivalency Order* is a regulation that was made by the federal government after the equivalency agreement was signed. This Order provides that the CEPA regulations covered by the Canada-Alberta equivalency agreement, including the *Vinyl Chloride Release Regulations, 1992*, do not apply in Alberta.

Legislation glossary

activity

anything designated as an activity under the Schedule of Activities to the *Environmental Protection and Enhancement Act*. Listed activities may be subject to the environmental assessment process and may be required to obtain approvals or registrations under the Act.

ambient monitoring

monitoring of outdoor air for levels of air emissions that cannot be attributed to a particular source.

approval

a document issued by Alberta Environmental Protection under the *Environmental Protection and Enhancement Act* to facilities or operations regulated under the Act. An approval sets out operating terms and conditions that must be met by the approval holder.

CEPA

the *Canadian Environmental Protection Act*.

Director

an official of Alberta Environmental Protection appointed under the *Environmental Protection and Enhancement Act* to carry out specific duties under the Act.

EPEA

the *Environmental Protection and Enhancement Act*.

equivalency

a concept under the *Canadian Environmental Protection Act* where provincial environmental laws can be deemed to be equivalent to CEPA regulatory requirements.

fugitive emissions

air emissions that are not caught by the designed capture systems in an industrial process.

opacity

the degree to which visible air emissions obstruct the passage of light.

particulates

fine liquid or solid particles found in air or emissions.

registration

a form of authorization given under the *Environmental Protection and Enhancement Act* that allows registered facilities or operations regulated under the Act to operate in accordance with the requirements of the relevant code of practice published by Alberta Environmental Protection.

source monitoring

monitoring of specific sources of air emissions, such as stacks, for levels of specified substances.

For more information

For further information about Alberta and federal legislation related to air quality, check the following sources.

References for legislation

- For information on how to access legislation and regulations, please see the Basic Legal Requirements fact sheet *Statutes and Regulations*, from the *Community Action on Air Quality* background materials.
- *Environmental Protection and Enhancement Act*, S.A. 1992, c.E-13.3
- *Activities Designation Regulation*, A.R. 211/96
- *Release Reporting Regulation*, A.R. 117/93
- *Substance Release Regulation*, A.R. 124/93
- *Ozone-Depleting Substances Regulation*, A.R. 125/93
- *Canadian Environmental Protection Act*, R.S.C. 1985, c.16 (4th Supp.)
- *Vinyl Chloride Release Regulations*, 1992, SOR/92-631
- *Alberta Equivalency Order*, SOR/94-752

Other written material

- *Release Reporting Guideline* (Alberta Environmental Protection, Pollution Control Division, June 1995). This guideline can be obtained from:

Alberta Environmental Protection
Information Centre
Main Floor, 9920 – 108 Street
Edmonton, AB T5K 2M4
Phone: (780) 427-2079 (toll-free in Alberta by calling 310-0000)
Fax: (780) 427-4407
E-mail: infocent@env.gov.ab.ca

This guideline can also be ordered through the Internet at <http://www.gov.ab.ca/env/info/infocentre/order.html>. When ordering, quote order number 787-F.

Internet sources

- <http://www.mb.ec.gc.ca/ENGLISH/POLLUTION/legislation.html>

This site provides access to the *Canadian Environmental Protection Act* and federal-provincial agreements related to pollution legislation.

- <http://www.gov.ab.ca/env/dept/facts/facttc.html>

This site provides access to Alberta Environmental Protection fact sheets about the *Environmental Protection and Enhancement Act* and some air quality matters regulated under it.

- <http://www.doe.ca/pdb/npri>

This site is the home page for the National Pollutants Release Inventory (NPRI), and includes yearly NPRI data.

Basic

Legal Requirements

REGISTRATIONS AND APPROVALS

NOTE: All references, including statutes, regulations and particular section numbers, are current to February 1999. Please update your information to the date that this material is being used. For suggestions on updating these materials, please see the Introduction for Community Action on Air Quality – Background Materials for Community Involvement in Air Quality Monitoring and Enforcement (“A word of caution about your use of the Community Action on Air Quality package”).

What are registrations and approvals?

The *Environmental Protection and Enhancement Act* (EPEA) regulates a variety of activities that take place in Alberta with respect to their environmental effects. Registrations and approvals are forms of authorization granted by Alberta Environmental Protection (AEP) to operators of regulated activities. The *Activities Designation Regulation* specifies those activities that require either a registration or an approval.

Registrations

Where a regulated activity requires a registration, the operator must register that activity with AEP by filing a registration form containing certain information. If a registration is issued, the operator may then carry out the regulated activity, but must do so in accordance with the requirements of the relevant code of practice published by AEP.

Codes of practice relate to specific activities, such as the operation of asphalt paving plants or compost facilities. Each code of practice establishes specific operating requirements that must be met by registered activities. For some activities, these requirements will relate to air quality matters. Copies of codes of practice can be purchased from the provincial Queen’s Printer bookstores.

Approvals

Approvals generally

An approval is an authorization document granted by AEP to the operator of a regulated activity. The approval authorizes an operator to carry out a regulated activity and sets out terms and conditions that apply to that activity.

One of the purposes of EPEA is to regulate the environmental effects of activities. Due to its broad application, EPEA and many of its related regulations are quite general in terms of specific environmental limits or requirements. Many of the specific environmental requirements that are imposed on activities regulated under EPEA are found in the approvals that apply to the specific activities. Note that an approval applies to one particular facility or operation, such as an industrial plant, rather than applying to all facilities carrying out a particular activity. This allows AEP to impose terms and conditions that are specific to the particular facility being regulated by an approval.

How does an approval relate to air quality?

Where an activity may have an effect on air quality, its approval will usually include terms and conditions regulating its operations and potential air quality effects. Often these terms and conditions will do the following things:

- set specific limits for air emissions caused by the activity;
- prohibit certain types or levels of air emissions;
- impose specific requirements on the types and frequency of air quality monitoring that the operator must carry out; and
- impose requirements for reporting of releases and other incidents in addition to those required by EPEA and the regulations.

If you are looking for specific numerical limits on air emissions for a particular regulated facility, these are most likely to be found in that facility's approval.

How do I find an approval?

Under EPEA, approvals are available to the public. You can obtain a copy of any approval issued under EPEA by contacting AEP's Regulatory Approvals Centre. You should provide AEP with the name of the operator that is the approval holder and the location of the facility that is the subject of the approval.

Tips on reading approvals

Helpful tools

Be sure to use the tools that may be included in an approval for assistance, such as a table of contents or headings. Tables of contents are not included in all approvals; however, where they are included, they will help you find particular subject areas. Headings will often be used to indicate the subject matter of different parts of an approval. As well, keep in mind that schedules are part of an approval and may relate to the subjects in which you are interested.

Definitions

Definitions are an important part of any approval. Words or phrases that have a commonly understood meaning in everyday language may be given a totally different meaning in an approval. Generally, definitions of terms that are used throughout an approval are found in the early parts of the approval. However, definitions that apply to a particular part of an approval may be found at the start of that part instead. Often an approval will incorporate definitions used in EPEA and related regulations, unless such terms are defined differently in the approval. If this is the case in an approval that you are reading, it may be necessary to make reference to EPEA or to regulations such as the *Substance Release Regulation* to find the defined meaning of terms used in the approval.

Amendments

You may be reading an approval that has had amendments (changes) made to it. If this is the case, the amendments will not be included as part of the main approval document, but will be attached on separate sheets. The amendments will refer to the sections of the original approval that have been amended, so it will be necessary to refer between the amendments and the approval to fully understand the amendments.

References to other documents

Certain sections of an approval or amendment may require the approval holder to do something in accordance with “the application”. This refers to the approval holder’s (operator’s) application for the approval or amendment that was filed with AEP. In some approvals, the terms and conditions will refer to the application in setting a requirement, rather than repeating the material from the application in the approval itself. Applications for approvals and amendments are publicly available under EPEA, and copies can be obtained from AEP’s Regulatory Approvals Centre.

An approval may refer to particular guidelines, especially in relation to requirements for sampling and analysis. Where an approval makes references to such guidelines by full name and reference number, they have legal effect and can be enforced as if they were part of the approval.

Other information

The dates on which an approval comes into effect and expires are important sections. In newer approvals, these can be found on the approval's cover sheet. In older approvals, the effective and expiry dates will be found within the main part of the approval. The approval's cover sheet is a handy source of information, as it includes:

- approval number,
- application number,
- effective date,
- expiry date,
- name and address of the approval holder, and
- a description of the activity regulated by the approval.

In some older approvals, you may find terms such as “licensee”, “licence holder”, “licence” and “air contaminant”. These terms are not found in EPEA, but relate to the *Clean Air Act*, a statute that was in effect before EPEA. The *Clean Air Act* was repealed and replaced by EPEA on September 1, 1993. EPEA provides that licences under the *Clean Air Act* and other legislation that were in effect when EPEA came into effect are deemed to be approvals under EPEA and continue in force until their expiry.

For more information

For further information about registrations and approvals, check the following sources.

- Copies of registrations, approvals and applications for registrations and approvals can be obtained at:

Alberta Environmental Protection
Regulatory Approvals Centre
Main Floor, 9820 – 106 Street
Edmonton, AB T5K 2J6
Phone: (780) 427-6311 (toll-free in Alberta by calling 310-0000)
Fax: (780) 422-0154

- Information about approvals and the process for issuing approvals under the *Environmental Protection and Enhancement Act* can be found on the Internet at <http://www.gov.ab.ca/env/dept/facts/approv.html>.

- For information on how to access legislation and regulations, see the Basic Legal Requirements fact sheet *Statutes and Regulations*, from the *Community Action on Air Quality* background materials.
- The *Environmental Protection and Enhancement Act* (S.A. 1992, c.E-13.3) requires approvals or registrations for activities regulated under it. Part 2, Division 2 of the Act sets out general approval and registration requirements. The Schedule of Activities at the end of the Act lists activities that are regulated by the Act and may require an approval or registration.
- The *Activities Designation Regulation* (A.R. 211/96) lists the specific activities that require an approval or registration under the *Environmental Protection and Enhancement Act*.
- The *Approvals and Registrations Procedure Regulation* (A.R. 113/93) sets out the procedures and requirements for operators who must obtain approvals or registrations.
- Codes of practice published by Alberta Environmental Protection set out the operating requirements that must be met by operators who must obtain registrations. Each code of practice relates to a specific activity. Copies of the various codes of practice can be purchased from the Queen's Printer Bookstores. Contact information for the Queen's Printer Bookstores follows.

Queen's Printer Bookstore
11510 Kingsway Avenue
Edmonton, AB T5G 2Y5
Phone: (780) 427-4952 (toll-free in Alberta by calling 310-0000)
Fax: (780) 452-0668

Queen's Printer Bookstore
Main floor, McDougall Centre
455 – 6 Street SW
Calgary, AB T2P 4E8
Phone: (403) 297-6251 (toll-free in Alberta by calling 310-0000)
Fax: (403) 297-8450

Codes of practice can also be purchased on-line through the Queen's Printer Internet site at <<http://www.gov.ab.ca/qp>>.

Basic

Legal Requirements

RESOURCE LIST FOR LEGAL MATTERS

NOTE: all references are current to February 1999. Please update your information to the date that this material is being used. For suggestions on updating these materials, please see the Introduction for Community Action on Air Quality – Background Materials for Community Involvement in Air Quality Monitoring and Enforcement (“A word of caution about your use of the Community Action on Air Quality package”).

For more information about the Canadian legal system and the law-making powers of the federal and provincial governments, check the following sources.

Written material

- “Natural Resource and Environmental Management: A Jurisdictional Primer”, by Alistair R. Lucas, in *Environmental Protection and the Canadian Constitution* (Environmental Law Centre, Edmonton, 1987), pp.31-43.

This article explains the division of law-making powers between the federal and provincial governments under the *Constitution Act, 1867*, and how both levels of government have authority to make laws related to environmental matters.

The book containing this article can be found at the Environmental Law Centre library (contact information below).

Environmental Law Centre
204, 10709 Jasper Avenue
Edmonton, AB T5J 3N3
Phone: (780) 424-5099; 1-800-661-4238 (toll-free Alberta)
Fax: (780) 424-5133
E-mail: elc@elc.ab.ca
<<http://www.elc.ab.ca/services/library2.html>>

Internet sources

- <<http://www.acjnet.org>>

The ACJNet (Access to Justice Network) site is an excellent source for a broad range of legal information. It includes links to a variety of law-related sites.

- <<http://www.extension.ualberta.ca/legalfaqs>>

This site, titled Canadian Legal FAQs, provides answers to commonly asked questions about Canadian law and the Canadian legal system. For information about federal and provincial law-making powers under the Canadian constitution, see <<http://www.extension.ualberta.ca/legalfaqs/nat/cons.htm>>.

To locate statutes and regulations, check the following sources.

Libraries

Environmental Law Centre
204, 10709 Jasper Avenue
Edmonton, AB T5J 3N3
Phone: (780) 424-5099; 1-800-661-4238 (Alberta only)
Fax: (780) 424-5133
E-mail: elc@elc.ab.ca
<<http://www.elc.ab.ca/services/library2.html>>
The Centre will fax and mail materials outside of Edmonton.

Alberta Environmental Protection library
6th floor, 9920 – 108 Street
Edmonton, AB T5K 2M4
Phone: (780) 422-5870 (toll-free in Alberta by calling 310-0000)
Fax: (780) 422-0170
E-mail: library@env.gov.ab.ca
<<http://www.augustana.ab.ca/neos/neosevp.htm>>
This library has Alberta statutes and regulations, and guidelines related to environmental legislation

University of Alberta, Faculty of Law
John A. Weir Memorial Law Library
2nd floor, Law Centre
University of Alberta
Edmonton, AB
Phone: (780) 492-3371
<http://www.library.ualberta.ca/library_html/libraries/law.html>

University of Calgary, Faculty of Law
Law Library
2nd floor, Murray Fraser Hall
2500 University Drive NW
Calgary, AB
Phone: (403) 220-3727 (general information/circulation); (403) 220-7274
(reference assistance)
Fax: (403) 282-3000
<<http://www.acs.ucalgary.ca/~sanders>>

Legislature Library
216 Legislature Building
10800 – 97 Avenue
Edmonton, AB T5K 2B6
Phone: (780) 427-2473 (toll-free in Alberta by calling 310-0000)

Law Society Library
2nd floor, Law Courts
1A Sir Winston Churchill Square
Edmonton, AB T5J 0R2
Phone: (780) 422-2343

Law Society Library
7th floor, Court House
611 – 4 Street SW
Calgary, AB T2P 1T5
Phone: (403) 297-7475

Law Society Library
Court House, 320 – 4 Street S.
Lethbridge, AB T1J 4C7
Phone: (403) 381-5639

Law Society Library
Court House, 4909 – 48 Avenue
Red Deer, AB T4N 3T5
Phone: (403) 340-5499

Note: smaller centres with provincial courthouses may have small libraries; check the provincial government telephone listings in your local area.

Stores

Queen's Printer Bookstore
11510 Kingsway Avenue
Edmonton, AB T5G 2Y5
Phone: (780) 427-4952 (toll-free in Alberta by calling 310-0000)
Fax: (780) 452-0668
Queen's Printer Bookstore
Main floor, McDougall Centre
455 – 6 Street SW, Calgary, AB T2P 4E8

Phone: (403) 297-6251 (toll-free in Alberta by calling 310-0000)
 Fax: (403) 297-8450

The Queen's Printer Bookstores sell copies of Alberta statutes and regulations and also codes of practice made under the *Environmental Protection and Enhancement Act*. If you are located outside of Edmonton or Calgary, you may be able to buy copies of statutes and regulations through your local bookstore. You can order statutes and regulations, as well as some government publications, from the Queen's Printer Bookstores by fax or mail, or on-line through the Queen's Printer Internet site at <<http://www.gov.ab.ca/qp>>.

Internet sources

<<http://www.gov.ab.ca/qp/index.html>>

This is the site for the Alberta Queen's Printer. At this location, you can obtain access to Alberta statutes and regulations by clicking on "legislation" within the text. You can then choose to find statutes or regulations.

<http://founder.library.ualberta.ca/ftp/index_en.html>

This site gives access to federal statutes and regulations. The legislation at this site is apparently updated twice yearly.

<http://canada.justice.gc.ca/Loireg/index_en.html>

This location provides access to federal statutes and regulations through the federal Department of Justice home page.

For more information on Alberta and federal legislation related to air quality, check the following sources.

References for legislation

- See the previous pages for information on accessing legislation.
- *Environmental Protection and Enhancement Act*, S.A. 1992, c.E-13.3
- *Activities Designation Regulation*, A.R. 211/96
- *Release Reporting Regulation*, A.R. 117/93
- *Substance Release Regulation*, A.R. 124/93
- *Ozone-Depleting Substances Regulation*, A.R. 125/93
- *Canadian Environmental Protection Act*, R.S.C. 1985, c.16 (4th Supp.)
- *Vinyl Chloride Release Regulations*, 1992, SOR/92-631
- *Alberta Equivalency Order*, SOR/94-752

Other written material

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Information Centre
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Edmonton, AB T5K 2M4
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E-mail: infocent@env.gov.ab.ca

This guideline can also be ordered through the Internet at
<<http://www.gov.ab.ca/env/info/infocentre/order.html>>. When ordering, quote order number
787-F.

Internet sources

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Fax: (780) 422-0154

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Legislation and regulations

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- The *Activities Designation Regulation* (A.R. 211/96) lists the specific activities that require an approval or registration under the *Environmental Protection and Enhancement Act*.
- The *Approvals and Registrations Procedure Regulation* (A.R. 113/93) sets out the procedures and requirements for operators who must obtain approvals or registrations.
- Codes of practice published by Alberta Environmental Protection set out the operating requirements that must be met by operators who must obtain registrations. Each code of practice relates to a specific activity. Copies of the various codes of practice can be purchased from the Queen's Printer Bookstores; see the previous pages of this resource list for further information.

Enforcement and Community Involvement

ENFORCEMENT OF THE ENVIRONMENTAL PROTECTION AND ENHANCEMENT ACT

NOTE: all references to statutes and regulation, including particular section numbers, are current to February 1999. Please update your information to the date that this material is being used. For suggestions on updating these materials, please see the Introduction for Community Action on Air Quality – Background Materials for Community Involvement in Air Quality Monitoring and Enforcement (“A word of caution about your use of the Community Action on Air Quality package”).

Introduction

Alberta Environmental Protection (AEP) is the provincial government department that is mainly responsible for enforcement of environmental legislation in Alberta, including the *Environmental Protection and Enhancement Act* (EPEA). Enforcement of EPEA includes offences

- under the Act,
- related to regulations made under EPEA, and
- related to approvals and registrations issued under EPEA.

Approvals are documents issued under EPEA to regulated facilities or operations that give them permission to operate. These documents set out operating terms and conditions that must be met by approval holders. Registrations are another form of authorization under EPEA that allow certain types of activities to occur in accordance with a specified code of practice.

These materials make reference to terms such as “compliance” and “contravention” or “noncompliance”. In these materials, “compliance” refers to situations where there may not be an offence under EPEA, but the circumstances create a need for action to ensure environmental protection. The terms “contravention” and “noncompliance” can be used interchangeably to refer to circumstances where regulatory requirements under EPEA are not met.

Enforcement principles for EPEA

AEP is the body that has been given responsibility to decide whether to take enforcement action. Other officials, such as municipal police, the RCMP, and municipal bylaw enforcement officers, may also be involved in enforcement of environmental legislation in Alberta. In assessing possible enforcement action, AEP will try to determine if there is noncompliance. AEP will consider various factors, including:

- any evidence of due diligence by the alleged offender (due diligence refers to whether the alleged offender took every reasonable precaution to prevent the situation);
- the elements of any contravention; and
- the quality of evidence available.

AEP carries out its enforcement activities in accordance with the *Enforcement Program for the Environmental Protection and Enhancement Act*. This is a policy document describing the manner in which AEP enforces EPEA and the principles governing AEP's enforcement activities. The two governing principles of that document are that enforcement will be firm but fair, and that it will be timely and consistent.

What gives rise to an investigation under EPEA?

In most situations, AEP begins investigations in response to:

- reports by industry of environmental incidents or releases of substances into the environment,
or
- public complaints or reports.

Industry reports

EPEA and the *Release Reporting Regulation* require that industry report releases of substances into the environment both orally and in writing to AEP. The *Release Reporting Guideline* provides details about types and amounts of released substances that must be reported. Industries that have approvals under EPEA may also be required to provide reports of releases or other incidents to AEP under the terms of the approval.

Public reports

Members of the public may report environmental incidents or make complaints about environmental matters to AEP by telephone. AEP operates a province-wide toll-free telephone line (1-800-222-6514) to accept reports and complaints 24 hours a day. The following information may assist AEP in responding to an incident or complaint:

- **WHO:** the name of the person or company apparently responsible for the incident; licence plate numbers; descriptions of persons and vehicles; numbers on Transportation of Dangerous Goods placards.
- **WHAT:** descriptions of the released substance and the surroundings, including appearance, odour, colour, sheen or scum on water, or presence of any dead aquatic life.
- **WHERE:** the specific location where the incident was observed; landmarks; sources of the released substance; actual and potential paths of the released substance.
- **WHEN:** the time of day when the incident occurred; the duration of the incident; any previous occurrences.
- **WHY:** was the incident accidental or deliberate?
- **WEATHER:** descriptions of the weather conditions, wind direction and speed.

AEP keeps the identity of callers confidential; however, AEP may contact the caller again for further information or details. The caller may be requested to appear as a witness in a prosecution if an incident requires court action.

Initial review

Every incident reported to AEP is reviewed by an investigator. Investigators are government employees, usually employed by AEP, who are appointed under EPEA to carry out specific investigative duties. The investigator considers the following information:

- frequency of the incident(s);
- magnitude of the incident;
- duration of the incident;
- timeliness and completeness of reporting, particularly by industry;
- environmental impact of the incident.

Investigations under EPEA

How are investigations started?

An investigation is used to gather evidence related to an alleged offence. In most instances, AEP will initiate an investigation where it has reasonable belief that an offence has occurred. As well, EPEA provides a means for citizens to initiate investigation of alleged offences. Two Alberta

citizens, over the age of 18, can file a sworn declaration of the facts of the alleged offence with AEP. Once the declaration has been filed, AEP is obliged to carry out an investigation of the alleged offence. However, AEP retains discretion to decide whether or not to pursue enforcement action.

Investigative steps

An investigator gathers a wide range of information to assist AEP in determining whether an investigation is required. The investigator will

- review any approval issued to the alleged offender under EPEA, paying particular attention to any terms related to limits for permitted substance releases, operating requirements for the facility, and reporting requirements;
- review the alleged offender's compliance history, looking for prior incidents, actions taken by the alleged offender to correct past environmental problems, and any past compliance or enforcement action taken by AEP against the alleged offender; and
- make initial contact with the alleged offender to gain a general understanding of the facility's operations, the events leading up to the incident and the actions taken in response to the incident.

At the beginning of an investigation, AEP sends a notice of the investigation to the alleged offender. This notice advises of the investigation, the reasons for it and the possibility of enforcement action.

The investigator will make an on-site visit to interview potential witnesses. These persons may be asked to provide a written statement about the incident under investigation. If the investigator believes, either before or during the interview, that the person being interviewed may be responsible for the incident, the investigator must warn that person of their rights under the Charter of Rights in relation to making statements and obtaining advice from a lawyer. In addition to carrying out interviews, the investigator may request a variety of information from the alleged offender, such as log books, charts, correspondence, procedures, drawings or other documents.

Purposes of an investigation

The main purposes of an investigation are to

- gather evidence to determine if a contravention has occurred;
- assess whether there is sufficient evidence to support enforcement action;
- examine the intent of the alleged offender in relation to the incident under investigation; and
- carry out an initial assessment of any defences that could be raised to the alleged offence.

One of the major matters considered in investigations under EPEA is that of due diligence, and whether it was exercised by the alleged offender. Due diligence refers to the taking of every reasonable precaution to prevent a contravention. In assessing due diligence, factors that can be considered include matters such as:

- procedures for preventing and dealing with incidents;
- staff training;
- condition of equipment; and
- industry standards related to operations and incident response.

Outcomes of an investigation

If there is not sufficient evidence to support enforcement action, AEP may either discontinue the investigation or take action to deal with the environmental effects of the incident. Where there is sufficient evidence of a contravention, AEP will review the case in detail to decide what enforcement action to take.

Enforcement under EPEA

Selection of enforcement tools

AEP considers the following factors in choosing the enforcement tool that it will use to deal with any particular contravention of EPEA:

- the severity of any adverse or potential adverse effect on the environment due to the incident;
- the intent of the alleged offender;
- the alleged offender's history of compliance or noncompliance with EPEA;
- consistency by AEP in enforcement of similar contraventions under EPEA;
- the duration of the contravention;
- the severity of the contravention in AEP's broad regulatory scheme; and
- the degree of cooperation of the alleged offender with AEP.

Enforcement tools

AEP has a number of enforcement tools available for dealing with contraventions of EPEA, and may choose to use more than one of these in response to a particular incident. The tools are:

- environmental protection orders;
- warning letters;
- administrative penalties;
- enforcement orders;
- cancellation of an approval, registration or certificate under EPEA;
- court orders;
- tickets; and
- prosecutions.

Environmental protection orders

Environmental protection orders are used to require action to prevent or remedy environmental harm or damage, and can also be used to deal with environmental emergencies. These orders seek to prevent or minimize adverse effects on the environment and can direct specific persons or parties to take a number of actions. AEP can issue these orders in situations where there is no contravention of EPEA, for example, where there is a substance release that is not prohibited under EPEA, but may cause an adverse effect.

Warning letters

AEP may send warning letters in situations where there is a minor contravention of EPEA with minimal potential for adverse environmental effect. These letters are intended to be a deterrent, and will only be used by AEP in situations where the offender has a history of compliance with EPEA and has taken steps to remedy or minimize the effects of the incident. A warning letter will only be used in relation to a first offence.

Administrative penalties

A Director may issue an administrative penalty as an alternative to prosecution under EPEA. A Director is an official of AEP appointed to carry out specific duties under EPEA. Administrative penalties are intended to be a deterrent, and are used to deal with minor contraventions that have minimal environmental impact. These penalties are used in situations where there is an ongoing problem that requires evidence-gathering activities beyond the site of the contravention. The maximum administrative penalty that can be assessed for each day of a contravention is \$5,000.

The *Administrative Penalty Regulation* sets out procedural details and requirements for the assessment of administrative penalties.

Enforcement orders

These orders may be issued by AEP when there is a contravention of EPEA, the related regulations or an approval. These orders are used to direct an offender to take action or stop action to correct the contravention.

Cancellation of an approval or certificate

Another enforcement tool available to AEP is cancellation of an approval, registration or certificate issued under EPEA. AEP considers this to be its most severe enforcement response, as the offender must then re-apply for a new approval, registration or certificate, usually at significant expense, and cannot operate until the new approval, registration or certificate is obtained. Factors that are considered by AEP in deciding whether to take this action include:

- the potential severity of environmental impact due to the contravention;
- the offender's compliance history;
- the offender's intent to commit the contravention; and
- whether the public interest would be served by the cancellation.

Court orders

AEP may obtain any of a variety of court orders as part of its enforcement strategy, depending on the particular circumstances. Court orders may be obtained to

- require compliance with an enforcement order;
- prevent the commission of an offence;
- prohibit interference with an investigation; or
- hold a party in contempt of court, which can involve monetary penalties or imprisonment.

Tickets

Tickets can be issued for certain offences under EPEA. These offences are listed in the *Procedures Regulation* made under the *Provincial Offences Procedures Act*. It is important to note that tickets are not the same as administrative penalties. Tickets are used to deal with single offences that have minor environmental effect, where evidence can be gathered at the site of the offence. They are usually issued by special constables.

Prosecutions

Another enforcement option is prosecution in the court system. Offences under EPEA that are considered serious in nature and are likely to be prosecuted include:

- failure to report a release that may cause an adverse effect;
- failure to take reasonable emergency measures;
- knowingly providing false information to AEP staff; and
- obstructing an investigation.

AEP, together with prosecutors from the provincial Department of Justice, will consider prosecution when the alleged offender did not take reasonable steps to prevent the offence, evidence of the offence is clear, and there is a need for punishment and deterrence. In successful prosecutions, the highest penalties are assessed for offences involving intent on the part of the alleged offender to commit the offence. The description of such offences in EPEA includes use of the term “knowingly”; for example, “knowingly providing false information”.

Appeals

Many types of enforcement action under EPEA can be appealed by the offender to the Environmental Appeal Board. The Board is an expert tribunal created by EPEA. Its role is to review specific types of decisions made by AEP officials under EPEA. Most enforcement orders and environmental protection orders and all administrative penalties can be appealed to the Board.

For more information

For further information about enforcement of EPEA, check the following sources.

- Alberta Environmental Protection maintains a toll-free telephone line at 1-800-222-6514 that is open 24 hours a day to receive reports and complaints from the public and industry about environmental matters.
- The Enforcement and Monitoring Division of Alberta Environmental Protection deals with environmental enforcement and monitoring matters on a province-wide basis. This division can be contacted at:

ENFORCEMENT & COMMUNITY INVOLVEMENT
Environmental Protection & Enhancement Act

Alberta Environmental Protection
Enforcement and Monitoring Division
11th Floor, 9820 – 106 Street
Edmonton, AB T5K 2J6
Phone: (780) 427-2560 (toll-free in Alberta by calling 310-0000)
Fax: (780) 427-3178

- Alberta Environmental Protection has six regional offices for different areas of the province. These regions are responsible for enforcement and monitoring matters at the regional level, and have staff designated to perform related functions. To determine the region in which your community is located, contact the regional office closest to your community. The contact information for the regions is listed below, and is also available on the Internet through <<http://www.gov.ab.ca/env/info/infocentre/alberta.html>>.

Alberta Environmental Protection
Northwest Boreal Region
306, 3rd Floor, Provincial Building
9621 – 96 Avenue, Bag 900-31
Peace River, AB T8S 1T4
Phone: (780) 624-6402 (toll-free in Alberta by calling 310-0000)
Fax: (780) 624-6542

Alberta Environmental Protection
Northeast Boreal Region
4th Floor, 9820 – 106 Street
Edmonton, AB T5K 2J6
Phone: (780) 427-7617 (toll-free in Alberta by calling 310-0000)
Fax: (780) 422-4192

Alberta Environmental Protection
Northern East Slopes Region
107, 111 – 54 Street
Edson, AB T7E 1T2
Phone: (780) 723-8390 (toll-free in Alberta by calling 310-0000)
Fax: (780) 723-8542

Alberta Environmental Protection
Parkland Region
3rd Floor, Provincial Building
4920 – 51 Street
Red Deer, AB T4N 6K8
Phone: (403) 340-4881 (toll-free in Alberta by calling 310-0000)
Fax: (403) 340-5173

Alberta Environmental Protection
Bow Region
Room 303, 2938 – 11 Street N.E.
Calgary, AB T2E 7L7
Phone: (403) 297-5959 (toll-free in Alberta by calling 310-0000)
Fax: (403) 297-6069

Alberta Environmental Protection
Prairie Region
245 Provincial Building
200 – 5th Avenue South
Lethbridge, AB T1J 4L1
Phone: (403) 381-5322 (toll-free in Alberta by calling 310-0000)
Fax: (403) 382-4008

- The *Enforcement Program for the Environmental Protection and Enhancement Act* is a policy document that provides details on how Alberta Environmental Protection carries out enforcement of the Act. To obtain a copy of this document, contact:

Alberta Environmental Protection
Enforcement and Monitoring Division
11th Floor, 9820 – 106 Street
Edmonton, AB T5K 2J6
Phone: (780) 427-2560 (toll-free in Alberta by calling 310-0000)
Fax: (780) 427-3178

- Basic information about Alberta Environmental Protection's enforcement activities is provided on the Internet at <<http://www.gov.ab.ca/env/protenf.html>>. An overview of the Enforcement Program is provided on the Internet at <<http://www.gov.ab.ca/env/protenf/EPEA/enforce.html>> Note that this is not the *Enforcement Program* policy document referred to in this fact sheet.
- Attached to the Alberta Environmental Protection home page on the Internet are various fact sheets about the *Environmental Protection and Enhancement Act* and related matters. These can be found at <<http://www.gov.ab.ca/env/dept/facts/facttc.html>> Fact sheets of interest include one about enforcement generally, at <<http://www.gov.ab.ca/env/dept/facts/enforce.html>>.
- The Environmental Law Centre, a non-profit charitable organization, provides environmental law information to the public free of charge, including information on enforcement of the *Environmental Protection and Enhancement Act*. For more information about the Centre's services, contact:

ENFORCEMENT & COMMUNITY INVOLVEMENT
Environmental Protection & Enhancement Act

Environmental Law Centre
204, 10709 Jasper Avenue
Edmonton, AB T5J 3N3
Phone: (780) 424-5099; 1-800-661-4238 (Alberta toll-free)
Fax: (780) 424-5133
E-mail: elc@elc.ab.ca
<<http://www.elc.ab.ca>>

- The Environmental Law Centre offers a search service that allows people to search by name for enforcement action taken by Alberta Environmental Protection under the *Environmental Protection and Enhancement Act* and legislation that preceded that Act. For more information about the Environmental Enforcement Historical Search Service, contact the Centre (contact information above) or see its home page at <<http://www.elc.ab.ca/services/search2.html>>. The fee for a search is \$25.00 plus GST per name search. Searches are provided at no charge to non-profit environmental organizations.

Enforcement and Community Involvement

YOUR INVOLVEMENT IN AIR QUALITY MONITORING AND ENFORCEMENT

NOTE: all references to statutes and regulations, including particular section numbers, are current to February 1999. Please update your information to the date that this material is being used. For suggestions on updating these materials, please see the Introduction for Community Action on Air Quality – Background Materials for Community Involvement in Air Quality Monitoring and Enforcement (“A word of caution about your use of the Community Action on Air Quality package”).

Having participated in a community training program, you may be wondering what you, as an individual citizen, can do in relation to air quality monitoring and enforcement. While air quality monitoring is a complex area, there are a number of things that you can do to follow up on your interests or concerns about air quality monitoring and enforcement.

Learn more about what concerns or interests you

A good first step is to learn more about the air quality matters that concern or interest you. This can include finding information about

- the substances or contaminants that are present in your community’s air;
- how particular substances or air contaminants are monitored;
- the laws (statutes and regulations) that apply to those substances;
- the environmental and health effects that can result from the release or presence of those substances in the air.

In taking this first step, you should be prepared to do some research on your own. You may need to ask lots of questions and make use of a wide range of sources to track down the information you want. The resource lists included in these materials can be helpful guides. While librarians and others with access to relevant information are willing to help you, don’t expect that the

information you are seeking will be handed to you in a nice neat package. You will likely have to do some digging on your own, depending on the information and level of detail you are seeking, and spend some time reviewing and assessing the information that you find.

Get involved in industry or government monitoring

Much of air monitoring is technically complicated, requiring complex and expensive equipment. However, there are ways that you can become involved in air quality monitoring.

Seek opportunities for involvement

Check with the industrial operators in your area that may have an effect on air quality. Many industrial facilities, particularly those located near communities or residential areas, have some type of public advisory group to act as a link between themselves and the local community. Some operators will give these groups information about their industrial processes and monitoring activities. This may include monitoring data and reports. If the operators in your area don't have a public advisory group and you feel there is sufficient community interest, lobby them to create one. Be persistent in making the community's interest known, and indicate how such a group could increase local understanding of their activities and improve their profile within the region.

Seek opportunities to participate in local industry's air quality monitoring activities. Local operators may be open to citizen participation in monitoring activities such as "riding along" to observe when they do monitoring, or auditing their monitoring results. It may be particularly persuasive if you can provide them with information about other operators that provide these types of opportunities. They may also be willing to provide you with copies of monitoring data and reports that they generate.

Review monitoring data

You can review monitoring data and reports generated by industry and government regarding air quality. Keep in mind that industry and government each carry out different types of monitoring and monitor for different substances and purposes, so you may not get the entire air quality picture for your community or region by examining one particular data set or report. If you want to obtain copies of industry-generated monitoring data and reports, take the following steps:

- Ask the particular operator(s) for copies of the material that you want. Some operators place copies of monitoring information in the local public library or have other means of making it publicly available.
- If your community falls within an airshed management zone established under the Clean Air Strategic Alliance (CASA), you may be able to obtain monitoring information through the zone. Often industrial operators within an airshed management zone participate in the zone's monitoring activities. As well, CASA maintains an Internet site at

<<http://www.casadata.org>> that provides access to ambient air quality monitoring data gathered from across Alberta.

- Industry generates much of its monitoring information in order to comply with legal requirements. In most instances, operators must provide their monitoring information to government regulators. Section 33 of the *Environmental Protection and Enhancement Act* lists information generated under the Act that is publicly available. This includes monitoring data that is submitted to Alberta Environmental Protection by approval holders and the information that is necessary to interpret it. As well, the *Freedom of Information and Protection of Privacy Act* provides a means for citizens to obtain information held by the provincial government.

With respect to government-generated monitoring data and reports, much of this information is made publicly available as a matter of course. You can also make use of the provincial *Freedom of Information and Protection of Privacy Act* and the federal *Access to Information Act* to gain access to government information.

Join a group

One of the easiest ways for you to take action on your air quality concerns or interests is to join a group that deals with air quality matters. There are a number of options available to you.

Environmental groups

An obvious place to start is with environmental groups. You may know of environmental groups in your area. Contact them and find out whether they deal with or would be interested in becoming involved in air quality matters.

The best resource for information about environmental groups in Alberta is the Alberta Environmental Network (AEN). The AEN is an umbrella organization for environmental groups throughout Alberta, and provides opportunities for these groups to share information and resources and work together in addressing environmental issues. Much of the AEN's cooperative activity takes place through its caucuses, which are groups that focus on specific subject areas. AEN member groups are open to join as many caucuses as are of interest to them. As part of its services, the AEN maintains a home page on the Internet, and also has a directory of environmental organizations in Alberta.

If you are interested in air quality matters on a broader basis, you may want to contact the Canadian Environmental Network (CEN). The CEN performs a similar function to the AEN, but on a national basis.

Municipal opportunities

You should also check with your municipality to find out if there are public participation opportunities related to environmental or air quality matters. Some municipalities have

environmental advisory committees that include public representation to provide input on local environmental matters to the municipal council and administration. If your municipality does not have such a committee, you may want to lobby it to create one, but keep in mind that the municipality will need to find funds in its budget to do so.

Do your own monitoring

What do you want to monitor?

One way to do your own air quality monitoring is to keep notes, videos or other records of local air quality. You can record air quality information on a regular basis, or choose only to record information about incidents of concern to you. You may want to record the following types of information in carrying out your own monitoring.

- Descriptions related to air quality, including any odours, and the appearance of any plume or substance trail (colour, density and size).
- Location information including your location when monitoring, any apparent sources of substances affecting air quality, and the path of any substance released where it can be determined (for example, visible emissions).
- Information about the date and the time of day and, if you are monitoring a specific incident, the duration of the incident.
- Information about any apparent effects caused by substances affecting air quality, including environmental and health-related effects. For example, if you or a family member seeks medical treatment for apparent health-related effects, keep a record of the diagnosis, the medical treatment you received, who provided it, and the duration of your symptoms.
- Descriptions of weather conditions, wind direction and speed.

Be consistent in monitoring

Where you are doing regular monitoring of air quality, consistency is an important consideration. You should try to do your monitoring the same way every time, from the same location. By maintaining the same procedure for carrying out your monitoring activities, you reduce the possibility that your results are affected by different locations or other variables beyond your control. This gives greater strength to your monitoring results.

What will you do with your monitoring information?

If you are planning to do your own air quality monitoring, you should consider what you want to do with the information that you will gather. Some options include:

- sharing the information with local industrial operators to discuss or otherwise deal with local air quality concerns;
- providing the information to government regulators, either to establish background data about local air quality conditions or to initiate investigative or enforcement proceedings;
- sharing the information with local groups or citizens who have similar interests or concerns about your community's air quality.

Chapter 2 of *Community Action on Air Quality - A Guidebook to Community Involvement in Air Quality Monitoring and Enforcement* contains further information and resources about air quality monitoring.

Other participation options

Public consultations

There may be opportunities for you to participate in initiatives related to air quality matters. In many instances, government undertakes public consultation when it is thinking of making changes in policy or legislation. Any public consultation on air quality matters would be a way for you to become involved by expressing your concerns.

Clean Air Strategic Alliance

The Clean Air Strategic Alliance (CASA) is a multi-stakeholder initiative that seeks to deal with air quality issues within Alberta. CASA involves a broad range of stakeholders with interests in air quality, including various provincial and federal government departments, industry, environmental groups, health groups and others. CASA maintains a home page on the Internet at <<http://www.casahome.org>>, publishes two different newsletters, and makes ambient air monitoring data from various regions of Alberta publicly accessible on the Internet at <<http://www.casadata.org>>.

Airshed monitoring zones

As well, CASA supports the development of airshed monitoring zones, which deal with air quality issues on a regional basis. There are currently three airshed monitoring zones within Alberta. If your community is located within one of these zones, you may wish to contact the zone to find out more about its activities and the opportunities for public participation. If there is not a zone in your area, you may want to contact CASA to find out more about how these zones are established and what would be required to establish a zone in your region.

Start your own group

Should you find that none of the options mentioned above satisfy your desire to take action, and you feel that there is sufficient community interest, you could consider starting your own group to deal with air quality issues. There is a wide range of information available on this topic; the resource list indicates a number of sources. Some of the matters you will have to consider include:

- planning, including developing a vision for your group;
- funding for your group and its activities;
- attracting participants and community support for your group;
- choosing and developing activities for your group.

While starting your own group can require a great deal of time and effort, it may be an effective way for you to take steps to deal with the air quality concerns in your community and work with your fellow citizens to take action on these concerns. Chapter 2 of *Community Action on Air Quality – A Guidebook for Community Involvement in Air Quality Monitoring and Enforcement* focuses on the creation and development of a volunteer group for air quality monitoring.

What can you do about enforcement?

Reporting

The provincial environment department, Alberta Environmental Protection (AEP), is the agency that is mainly responsible for enforcement of environmental laws related to air quality. One of the main ways you can become involved in assisting enforcement is to report incidents or other matters of concern to AEP.

AEP maintains a toll-free, 24-hour telephone line at 1-800-222-6514 for environmental complaints and reports. All calls taken through this line are referred to an AEP investigator for investigation. The identity of callers is kept confidential; however, AEP may contact callers again where they require further information about a report. When making a report on this line, you can indicate to AEP if you would like to receive information about the results of their investigation.

AEP maintains six regional offices that are responsible for regulatory matters in specific regions of Alberta. Each office has staff members that carry out monitoring and enforcement duties. You may choose to provide information or reports to the office for the region covering your community. The resource list contains further information about contacting the different regional offices.

Investigations

Another option available to citizens is to take steps to initiate an investigation of an alleged offence under the *Environmental Protection and Enhancement Act*. The Act provides a procedure where two Alberta citizens over the age of 18 can provide a sworn statement related to the alleged offence, including the information supporting their belief that an offence has occurred. When such a statement is provided to the Director, who is an official within AEP, AEP must then carry out an investigation and report back on its results to the citizens who initiated it. AEP officials retain the discretion to determine whether to take enforcement action based on the investigation.

Private prosecutions

One other option available to citizens is to initiate a prosecution for an offence of regulatory legislation, such as EPEA. The common law allows citizens to bring a private prosecution of an offence. However, it is important to keep in mind that this is often a last resort for individual citizens. It will be necessary to retain a lawyer to act for you in prosecuting the offence, which can become quite costly. However, any fine that may be assessed by the court in a successful prosecution will not be payable to you, but rather to the provincial treasury, similar to other fines.

As well, the Attorney General has the right at law to intervene in private prosecutions and take over conduct of the proceedings. Once the Attorney General has intervened, he or she may exercise their discretion over the prosecution, which can include deciding to stay the proceedings. A stay of proceedings has the practical effect of ending the prosecution unless action is taken within one year of the stay to resume the prosecution.

Given these difficulties, private prosecution is not an enforcement tool to be lightly pursued. Any person considering commencing a private prosecution should first investigate its requirements and implications in detail.

For more information

For further information about becoming involved in air quality monitoring and enforcement, see the Enforcement and Community Involvement fact sheet *Resource List for Enforcement Matters and Public Involvement*, from *Community Action on Air Quality - Background Materials for Community Involvement in Air Quality Monitoring and Enforcement*.

Enforcement and Community Involvement

RESOURCE LIST FOR ENFORCEMENT MATTERS AND PUBLIC INVOLVEMENT

NOTE: all references are current to February 1999. Please update your information to the date that this material is being used. For suggestions on updating these materials, please see the Introduction for Community Action on Air Quality – Background Materials for Community Involvement in Air Quality Monitoring and Enforcement (“A word of caution about your use of the Community Action on Air Quality package”).

For more information about enforcement of the *Environmental Protection and Enhancement Act* and about public involvement in air quality monitoring and enforcement, check the following sources.

Alberta Environmental Protection

Alberta Environmental Protection maintains a toll-free telephone line at 1-800-222-6514 that is open 24 hours a day to receive reports and complaints from the public and industry about environmental matters.

The Enforcement and Monitoring Division of Alberta Environmental Protection deals with environmental enforcement and monitoring matters on a province-wide basis. This division can be contacted at:

Alberta Environmental Protection
Enforcement and Monitoring Division
11th Floor, 9820 – 106 Street
Edmonton, AB T5K 2J6
Phone: (780) 427-2560 (toll-free in Alberta by calling 310-0000)
Fax: (780) 427-3178

Alberta Environmental Protection has six regional offices for different areas of the province. These regions are responsible for enforcement and monitoring matters at the regional level, and have staff designated to perform related functions. To determine the region in which your community is located, contact the regional office closest to your community. The contact information for the regions is listed below, and is also available on the Internet through <http://www.gov.ab.ca/env/info/infocentre/alberta.html>.

Alberta Environmental Protection
Northwest Boreal Region
306, 3rd Floor, Provincial Building
9621 – 96 Avenue, Bag 900-31
Peace River, AB T8S 1T4
Phone: (780) 624-6402 (toll-free in Alberta by calling 310-0000)
Fax: (780) 624-6542

Alberta Environmental Protection
Northeast Boreal Region
4th Floor, 9820 – 106 Street
Edmonton, AB T5K 2J6
Phone: (780) 427-7617 (toll-free in Alberta by calling 310-0000)
Fax: (780) 422-4192

Alberta Environmental Protection
Northern East Slopes Region
107, 111 – 54 Street
Edson, AB T7E 1T2
Phone: (780) 723-8390 (toll-free in Alberta by calling 310-0000)
Fax: (780) 723-8542

Alberta Environmental Protection
Parkland Region
3rd Floor, Provincial Building
4920 – 51 Street
Red Deer, AB T4N 6K8
Phone: (403) 340-4881 (toll-free in Alberta by calling 310-0000)
Fax: (403) 340-5173

Alberta Environmental Protection
Bow Region
Room 303, 2938 – 11 Street N.E.
Calgary, AB T2E 7L7
Phone: (403) 297-5959 (toll-free in Alberta by calling 310-0000)
Fax: (403) 297-6069

Alberta Environmental Protection
Prairie Region
245 Provincial Building
200 – 5th Avenue South
Lethbridge, AB T1J 4L1
Phone: (403) 381-5322 (toll-free in Alberta by calling 310-0000)
Fax: (403) 382-4008

The *Enforcement Program for the Environmental Protection and Enhancement Act* is a policy document that provides details on how Alberta Environmental Protection carries out enforcement of the Act. To obtain a copy of this document, contact:

ENFORCEMENT & COMMUNITY INVOLVEMENT
Resource List

Alberta Environmental Protection
Enforcement and Monitoring Division
11th Floor, 9820 – 106 Street
Edmonton, AB T5K 2J6
Phone: (780) 427-2560 (toll-free in Alberta by calling 310-0000)
Fax: (780) 427-3178

Alberta Environmental Protection's home page on the Internet is at <<http://www.gov.ab.ca/env>>. It provides basic introductory information about the department and its services.

Basic information about Alberta Environmental Protection's enforcement activities is provided on the Internet at <<http://www.gov.ab.ca/env/protenf.html>> An overview of the Enforcement Program is provided on the Internet at <<http://www.gov.ab.ca/env/protenf/EPEA/enforce.html>> Note that this is not the *Enforcement Program* policy document referred to in the background materials on enforcement.

Attached to the Alberta Environmental Protection home page on the Internet are various fact sheets about the *Environmental Protection and Enhancement Act* and related matters. These can be found at <<http://www.gov.ab.ca/env/dept/facts/facttc.html>> Fact sheets of interest include those about the *Release Reporting Regulation*, at <<http://www.gov.ab.ca/env/dept/facts/release.html>>, and about enforcement generally, at <<http://www.gov.ab.ca/env/dept/facts/enforce.html>>.

General information about air quality monitoring that Alberta Environmental Protection carries out can be found on the Internet at <<http://www.gov.ab.ca/env/air/airqual/monitor.html>>.

A list of air quality publications that are available from the Alberta Environmental Protection library can be found on the Internet at <<http://www.gov.ab.ca/env/air/airqual/pubs.html>>.

Internet access is also available for some quarterly and annual air quality reports and special air quality surveys done by Alberta Environmental Protection. The quarterly reports are only available on the Internet starting from the first quarter of 1997 (January – March). The annual reports are available on the Internet for 1994 through 1996.

Quarterly air quality reports: <<http://www.gov.ab.ca/env/air/airqual/quarter.html>>

Annual air quality reports: <<http://www.gov.ab.ca/env/air/airqual/annual.html>>

Special air quality reports: <<http://www.gov.ab.ca/env/air/airqual/special.html>>

Print copies of these reports can be obtained from:

Alberta Environmental Protection
Information Centre
Main Floor, 9920 – 108 Street
Edmonton, AB T5K 2M4
Phone: (780) 427-2079 (toll-free in Alberta by calling 310-0000)
Fax: (780) 427-4407
E-mail: infocent@env.gov.ab.ca

Print copies of these reports can also be ordered through the Internet; see <http://www.gov.ab.ca/env/info/infocentre/pubair.html> for order numbers for specific reports and for access to the electronic order form.

The Alberta Environmental Protection library maintains a large collection of environmental information, including government documents and reports. This library is open to the public during regular government office hours (Monday – Friday, 8:15 a.m. – 4:30 p.m.) The library is located at:

Alberta Environmental Protection library
6th floor, 9920 – 108 Street
Edmonton, AB T5K 2M4
Phone: (780) 422-5870 (toll-free in Alberta by calling 310-0000)
Fax: (780) 422-0170
E-mail: library@env.gov.ab.ca
<<http://www.augustana.ab.ca/neos/neosevp.htm>>

The library is part of the NEOS Consortium of libraries, and its catalogue can be accessed on the Internet through the University of Alberta GATE catalogue at <http://gate.library.ualberta.ca>.

Clean Air Strategic Alliance (CASA)

CASA is a non-profit, multi-stakeholder body that carries out strategic management of air quality in Alberta. It is made up of a Board of Directors representing various stakeholders and project teams that address specific air quality issues. CASA can be contacted at:

9th Floor, Sterling Place
9940 – 106 Street
Edmonton, AB T5K 2N2
Phone: (780) 427-9793
Fax: (780) 422-3127
E-mail: casa@casahome.org
<<http://www.casahome.org>>

CASA's website, at www.casahome.org, is a good source of information about Alberta air quality. It is possible to access air monitoring data through this site (see information below about the Alberta Ambient Air Data Management System). CASA also maintains information on the site about its projects and initiatives at <http://www.casahome.org/project.htm>, as well as fact sheets on various air quality matters at <http://www.casahome.org/faqs2.htm>.

ENFORCEMENT & COMMUNITY INVOLVEMENT
Resource List

The website also contains information about the three existing airshed management zones that have been established under CASA at <<http://www.casahome.org/zones.htm>>. Airshed management zones are established to deal with air quality issues in a specific region. This includes carrying out air quality monitoring for the region. The CASA publication *Zone Air Quality Management Guidelines* provides information about how and when zones are created, and discusses options other than zones that are available. Copies of this document can be obtained from CASA or through the website at <<http://www.casahome.org/process.htm>>.

The existing airshed management zones are the West Central Airshed Society, which covers west central Alberta, the Parkland Airshed Management Zone, which covers central Alberta directly south of the West Central zone, and the Southern Wood Buffalo Zone, which covers the Fort McMurray and Fort McKay regions. Information about these zones can be obtained through the CASA website at <<http://www.casahome.org/zones.htm>>, or by contacting the zones directly as follows:

West Central Airshed Society
P.O. Box 6360
Drayton Valley, AB T7A 1R8
<<http://www.casahome.org/wcas.htm>>

Parkland Airshed Management Zone
P.O. Box 299
Sundre, AB T0X 1X0
Phone: (403) 638-2631
Fax: (403) 335-9207
e-mail: casa@casahome.org
<<http://www.casahome.org/pamz.htm>>

Southern Wood Buffalo Zone
c/o Wood Buffalo Environmental Association
Box 5567
Fort McMurray, AB T9H 3G5
e-mail: airmon@telusplanet.net
<<http://www.wbea.org>>
<<http://www.casahome.org/raqcc.htm>>

CASA also maintains another website that provides air quality and ecological data for Alberta, known as the Alberta Ambient Air Data Management System (AAADMS). This site can be accessed at <<http://www.casadata.org>> or through the "CASA Data Warehouse" link on the main CASA website at <<http://www.casahome.org>>.

Access to government information

The *Disclosure of Information Regulation* (A.R. 116/93) sets out the procedure for accessing information under that is publicly available under the *Environmental Protection and Enhancement Act*. To obtain copies of such information, contact

Alberta Environmental Protection
Regulatory Approvals Centre
Main Floor, 9820 – 106 Street
Edmonton, AB T5K 2J6
Phone: (780) 427-6311 (toll-free in Alberta by calling 310-0000)
Fax: (780) 422-0154

Information held by the provincial government can also be accessed under the *Freedom of Information and Protection of Privacy Act* (S.A. 1994, c. F-18.5). The government of Alberta maintains a home page for this Act at <<http://www.gov.ab.ca/foip>>. Each provincial government department also has staff designated to deal with information requests under this Act. For Alberta Environmental Protection, contact

Alberta Environmental Protection
FOIP Coordinator
6th floor, 9915 – 108 Street
Edmonton, AB T5K 2G8
Phone: (780) 427-4429 (toll-free by calling 310-0000)
Fax: (780) 427-9838

Information held by the federal government can be accessed under the *Access to Information Act* (R.S.C. 1985, c. A-1). The website <<http://infoweb.magi.com/~accessca/brochure.html>> provides basic information about accessing information under this Act.

The *Guide to Access to Information and Protection of Privacy – Alberta and Canada* is an excellent practical information resource to guide you through the process of accessing information held by either the provincial or federal government. The guide is written and published by the Alberta Civil Liberties Research Centre, and can be purchased from the Centre for \$3.00 plus shipping and handling. The Centre can be contacted at:

Alberta Civil Liberties Research Centre
University of Calgary
c/o Faculty of Law
2500 University Drive N.W.
Calgary, AB T2N 1N4
Phone: (403) 220-2505
Fax: (403) 284-0945
e-mail: aclrc@calcna.ab.ca
<<http://www.calcna.ab.ca/populati/communit/acl/aclrc.html>>

The full text of the *Guide to Access to Information and Protection of Privacy – Alberta and Canada* is also available on the Centre's home page. Note that the Centre holds copyright to the Guide, which is available for people to download and print a copy for personal use only. The Guide can be accessed at <<http://www.calcna.ab.ca/populati/communit/acl/foiptoc.html>>.

Environmental Law Centre

This non-profit charitable organization provides environmental law information to the public free of charge, including information on enforcement of the *Environmental Protection and Enhancement Act*. For more information about the Centre's services, contact:

Environmental Law Centre
204, 10709 Jasper Avenue
Edmonton, AB T5J 3N3
Phone: (780) 424-5099
Fax: (780) 424-5133
Alberta toll-free: 1-800-661-4238
E-mail: elc@elc.ab.ca
<<http://www.elc.ab.ca>>

The Centre maintains a library of environmental information that is accessible to the public free of charge. The library, located at the Centre's office, is open Monday - Friday, 8:30 a.m. – 12:00 noon and 1:00 p.m. – 4:30 p.m. Included in the library collection are various court decisions and the Centre's quarterly newsletter *NewsBrief*, which contains regular information on enforcement in the "Enforcement Briefs" column. For further information about the Centre's library, see <<http://www.elc.ab.ca/services/library2.html>>.

The Centre offers a search service that allows people to search by name for enforcement action taken by Alberta Environmental Protection under the *Environmental Protection and Enhancement Act* and legislation that preceded that Act. For more information about the Environmental Enforcement Historical Search Service, contact the Centre or see its home page at <<http://www.elc.ab.ca/services/search2.html>>. The fee for a search is \$25.00 plus GST per name search. Searches are provided at no charge to non-profit environmental organizations.

The *Directory of Environmental Resource Collections in Alberta* is an Environmental Law Centre publication that lists environmental information collections and libraries throughout Alberta. The *Directory* can be purchased from the Centre and is also available for use at the Centre's library. For more information, see <<http://www.elc.ab.ca/publicat/bookcat2.html>>.

Where Can I Find...? A Research Guide for Groups Interested in Health and Environment Issues

This booklet, published jointly by Health Canada and Environment Canada, provides helpful information on carrying out research and information gathering activities. Note that this booklet was prepared in Halifax, and thus contains some specific references to information sources in Atlantic Canada. However, it contains enough general information to be useful to anybody seeking to gather environmental information.

This booklet can be obtained free of charge from:

EcoAction 2000
Environment Canada
16th Floor, Queen Square
45 Alderney Drive
Dartmouth, Nova Scotia B2Y 2N6
Phone: (902) 426-8521
Fax: (902) 426-2062
E-mail: ecoaction2000.mar@ec.gc.ca

This booklet can also be obtained on the Internet at
<<http://www.ns.ec.gc.ca/ecoaction/research.pdf>>.

Alberta Environmental Network

The Alberta Environmental Network (AEN) operates as a non-profit grassroots umbrella organization for Alberta environmental organizations. It seeks to facilitate sharing of information and resources among member groups and assists them in taking common action.

The AEN can be contacted at:

Alberta Environmental Network
10511 Saskatchewan Drive
Edmonton, AB T6E 4S1
Phone: (780) 433-9302
Fax: (780) 433-9305
E-mail: aen@web.net
<<http://www.web.net/~aen>>

AEN publications include the *Alberta Environmental Directory*, a listing of environmental groups and other organizations involved in environmental matters, and *AEN Field*Notes*, the AEN's regular newsletter. See <<http://www.web.net/~aen/fieldnotes/fieldnotes.htm>> for further information about *Field*Notes*. For further information about the *Alberta Environmental Directory*, see <<http://www.web.net/~aen/member/directory.htm>>. Copies of the directory can be purchased for \$31.05 (includes GST and postage) from:

Pembina Institute for Appropriate Development
Box 7558
Drayton Valley, AB T7A 1S7
Phone: (780) 542-6272
Fax: (780) 542-6464

Canadian Environmental Network

The Canadian Environmental Network (CEN) is a national umbrella organization for environmental non-governmental groups. It maintains several groups, known as caucuses, focusing on specific areas of interest and concern. Provincial and territorial networks are affiliated with the CEN. The CEN can be contacted at:

300 – 945 Wellington
Ottawa, ON K1Y 2X5
Phone: (613) 728-9810
Fax: (613) 728-2963
E-mail: cen@cen.web.net

Community Action on Air Quality – A Guidebook to Community Involvement in Air Quality Monitoring and Enforcement

The guidebook portion of the Community Action on Air Quality package contains chapters on forming a community-based volunteer group to carry out environmental monitoring and enforcement. It also contains helpful information on making contacts, building partnerships and accessing funding.

The Community Action on Air Quality materials package is published by the Environmental Law Centre. The package, which includes the guidebook, can be purchased in print version by contacting:

Environmental Law Centre
204, 10709 Jasper Avenue
Edmonton, AB T5J 3N3
Phone: (780) 424-5099
Fax: (780) 424-5133
Alberta toll-free: 1-800-661-4238
E-mail: elc@elc.ab.ca

The guidebook can also be downloaded from the Internet free of charge at the Centre's home page: <<http://www.elc.ab.ca>>.

How-To Guide for Millennium Eco-Communities: From Needs Assessment to Evaluation

This Environment Canada publication provides a good basic guide to development of community-based environmental projects. It covers assessment of community needs; setting objectives; development of partnerships; finding and keeping volunteers; communications; and project evaluation.

This publication can be obtained from regional offices for the Environment Canada program EcoAction 2000. The Alberta and Northwest Territories regional office is:

EcoAction 2000
4999 – 98 Avenue
Twin Atria #2, Room 200
Edmonton, AB T6B 2X3
Phone: (780) 951-8710 or 1-800-567-1570
Fax: (780) 495-4367
E-mail: ecoaction2000.edm@ec.gc.ca

This publication can also be obtained on the Internet at
<http://www.ec.gc.ca/eco/started_e.htm#guide>.

Green Teacher magazine

This Canadian-published magazine is about environmental education, with an emphasis on children and youth. The Spring-Summer 1998 issue (Issue 55) focuses on environmental monitoring, and contains information about various contacts and monitoring programs. Back issues and subscriptions can be purchased.

Contact the magazine at:

Green Teacher
95 Robert Street
Toronto, ON M5S 2K5
Phone: (416) 960-1244
Fax: (416) 925-3474
E-mail: greentea@web.net
<<http://www.web.net/~greentea>>

Private prosecutions

Enforcing Environmental Law: A Guide to Private Prosecution is written by Linda F. Duncan and published by the Environmental Law Centre. It provides a layman's guide to private prosecution of environmental offences. This book can be found at the Environmental Law Centre library, and can also be purchased from the Environmental Law Centre for \$29.95 (\$6.25 for members of the Canadian Environmental Network and provincial affiliates such as the Alberta Environmental Network).

To purchase this book, contact:

Environmental Law Centre
204, 10709 Jasper Avenue
Edmonton, AB T5J 3N3
Phone: (780) 424-5099
Fax: (780) 424-5133
Alberta toll-free: 1-800-661-4238
E-mail: elc@elc.ab.ca
<<http://www.elc.ab.ca/publicat/order2.html>>

The Environmental Law Centre library carries a range of materials on private prosecution of environmental offences. The library is located at the Environmental Law Centre office at 204,

ENFORCEMENT & COMMUNITY INVOLVEMENT
Resource List

10709 Jasper Avenue, Edmonton, AB T5J 3N3, and is open to the public Monday through Friday, 8:15 a.m. – 4:30 p.m. (closed 12:00 noon – 1:00 p.m.). For further information, the library can be contacted at:

Phone: (780) 424-5099

Fax: (780) 424-5133

Alberta toll-free: 1-800-661-4238

E-mail: elc@elc.ab.ca

<<http://www.elc.ab.ca/services/library2.html>>

Alberta Environmental Protection

Department areas related to air quality monitoring

