SJR 34 HAZARDOUS WASTE MANAGEMENT STUDY

Final Report to the 54th Legislature of the State of Montana

January 1995

Prepared by the Montana Environmental Quality Council

Senate Joint Resolution 34

HAZARDOUS WASTE MANAGEMENT STUDY

Summary Report

January 1995

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Acknowledgements

The members and staff of the Environmental Quality Council wish to thank the many people who contributed their time and expertise to our study of hazardous waste management under SJR 34. We express particular appreciation to the members of the Hazardous Waste Management Working Group who unselfishly volunteered their time and effort. Without their assistance, this report would not have been possible. We also wish to acknowledge Gerald Mueller, facilitator for the HWMWG, for his persistent and effective facilitation. Finally, we wish to acknowledge the staff of the Montana Department of Health and Environmental Sciences, especially Don Vidrine, for the patience and professionalism with which they responded to our every request for information.

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Introduction

Senate Joint Resolution 34, enacted by the 1993 Legislature, requested the Environmental Quality Council (EQC) to conduct a study of the management and disposal of hazardous waste. The impetus for the study resolution came from contentious and divisive debate throughout the 53rd Legislative Session over the burning of hazardous waste in cement kilns.

Broadly framed, SJR 34 asked the EQC to examine such issues as hazardous waste reduction and recycling strategies, public and private disposal options, siting criteria, Montana's status in the regional capacity assurance plan, and the adequacy of the current regulatory framework. In conducting the study, the EQC was directed to involve federal, state, and local officials, industries and citizens. For the complete text of SJR 34, please see **Appendix A**.

I. Identification of Issues for Study

After reviewing the components of SJR 34 at its first meeting in June 1993, the EQC decided it was not possible to conduct a thorough study during a single interim of each of the issues identified in the study resolution. Consequently, the EQC established a broad-based working group, representative of the parties with a stake in hazardous waste management, and charged the group with the task of developing a recommendation on how to narrow the scope and focus of the study to a manageable set of issues. After holding three meetings in Helena and public hearings in Billings and Missoula, the working group recommended that the SJR 34 study:

1. *Analyze the status and adequacy of the state hazardous waste management regulatory framework, (see Chapter 2) including the standards established in the framework and the resources necessary to implement the framework. This analysis should address:*

(a) Whether the state can better manage or regulate conditionally exempt quantities of hazardous waste; and,

(b) Siting criteria for hazardous waste management facilities.

2. Evaluate the state's role in hazardous waste minimization, including the minimization of household hazardous waste.

The working group further recommended that the study be conducted through a consensus-based process. In addition, the working group suggested the EQC seek ways to involve a broader array of people in the study.

Several possible approaches forconducting the study were also suggested:

1. Analyze impacts of existing and changing regulations on generators, public health, and the environment. Also, identify cost effective disposal systems.

2. Discuss the state's hazardous waste management and disposal as well as the state's role in regional hazardous waste management and disposal.

II. Establishment of HWMWG

The EQC accepted the working group's recommendations in September 1994, and then formalized its membership as the Hazardous Waste Management Working Group (HWMWG). The HWMWG was charged with the task of developing consensus recommendations to the EQC on the forementioned study. A list of working group members is found in **Appendix B.**

The EQC also hired a facilitator, Gerald Mueller, to facilitate the working group process. A copy of the ground rules adopted by the HWMWG to govern this process is located in **Appendix C.**

The HWMWG held ten meetings between October 1993 and September 1994. Attendance at meetings averaged around 30 people, although occasionally as many as 45 people attended. (Copies of minutes from the HWMWG meetings are available from the EQC.) Generally, the working group proceeded through the list of identified issues one by one. For each issue, the HWMWG heard presentations or received background information on the issue; developed a set of sub-issues of concern to one or more members of the group; evaluated options for responding to the issues; and, made a decision on a recommendation.

A summary of the recommendations developed by the HWMWG follows this introduction. The limited number of recommendations reflects the diversity of viewpoints represented on the HWMWG, the controversial nature of the issues addressed, and the working groups commitment to only making recommendations to which every member could agree.

III. Purpose of Study Report

The limited number of recommendations developed by the HWMWG does not reflect the depth and quality of the working group's discussion nor the extensive information and data gathered during the course of the study. The purpose of this report is to provide: 1) a vehicle for reporting information and data; and, 2) a record of the working group's deliberations. Policymakers probably will learn more from reviewing a record of the HWMWG's discussion and the options the group considered but rejected than from reviewing the recommendations. The report is intended to provide a common base of information on the management and regulation of hazardous waste, and a foundation for the beginning of future public debates and discourse over the direction of hazardous waste management in Montana.

While this report attempts to explain why the HWMWG made the decisions it did and the basis for those decisions, it is not a verbatim record of the group's discussion or the information presented to the HWMWG. In the course of summarizing and bringing structure to discussions that occasionally were chaotic, some meaning and intent most certainly have been lost.

The first chapter of the report provides background information on the state's hazardous waste generation and disposal. The remainder of the report follows the four study issues, with a chapter dedicated to each issue: the status and adequacy of the hazardous waste regulatory framework; conditionally exempt small quantity generators; siting; and waste minimization. Generally, each chapter of the report contains background information on the issue, a discussion of options considered, and the final recommendation or resolution of the issue.

IV. Summary of Final Recommendations and Proposed Legislation

1. As a part of its enforcement study, the Environmental Quality Council should evaluate the enforcement and monitoring programs of the Air Quality Division and Waste Management Division of the Department of Health and Environmental Sciences.

2. The Hazardous Waste Management Working Group recognizes that staff recruitment and retention problems exist within the Department of Health and Environmental Science's Air Quality Division and Hazardous Waste Management program.

   The members of the Hazardous Waste Management Working Group recommend that the EQC send a letter to the state's Congressional delegation requesting their assistance in changing an Environmental Protection Agency (EPA) policy that prohibits the use of state fee revenue to meet the match requirement for the federal air program grant.

3. A company's clearly defined pattern of compliance or noncompliance should be a factor considered in the decision to issue a permit for a hazardous waste management facility.

4. The MSU Extension Service's pollution prevention program provides a valuable -- and possibly essential -- service to Montana and to small businesses in the state, and the state should take action to continue the program's funding beyond the life of the current EPA grant.

   The EQC should consider sponsoring a proposal to fund the MSU Extension Service's pollution prevention program with 50% general funding and/or fees, with the additional amount of necessary funding for the program provided by the MSU Extension Service through grants or other means.

5. The members of the Hazardous Waste Management Working Group agreed upon the following recommendations related to the tax credit for investment in property used to collect or process reclaimable material and the tax deduction for the purchase of recycled materials provided for in Title 15, chapter 32, part 6:

   a. The Waste Management Division of the Department of Health and Environmental Sciences should provide technical assistance to the Department of Revenue in writing rules to implement Title 15, chapter 32, part 6 and in making case-by-case determinations about whether a claim qualifies for a credit or deduction.

   b. Title 15, chapter 32, part 6 is scheduled to terminate on December 31, 1995. The sunset should be extended for another two years, until December 31, 1997.

   c. The Legislature should study how to expand the tax credits and deductions provided for in Title 15, chapter 32, part 6 to include incentives for the purchase of equipment to reduce or reuse hazardous waste.

Chapter One: Hazardous Waste Generation and Disposal Rates

As discussed in the introduction, the EQC established a broad-based working group to develop recommendations on how to narrow the scope and focus of the hazardous waste study to a manageable set of issues. One of the recommendations this group made was that, as an approach to conducting the study, hazardous waste disposal and generation rates should be analyzed. One of the first tasks the Hazardous Waste Management Working Group completed was to collect data on the types and amounts of hazardous waste generated in Montana, and how it was managed. These data, based on generator reports to the Department of Health and Environmental Sciences (DHES), were tabulated and summarized in graphic form by the Natural Resource Information System, located in the Montana State Library. This chapter presents the results of that work.

How much hazardous waste is generated in Montana?

I. Hazardous Waste Generation

The Hazardous Waste Management Working Group used reporting data received by the DHES from large and small quantity generators to document hazardous waste generation rates in Montana for the years 1986-1992. **Figure 1** presents the data for 1992.

In 1992, 187 large and small quantity generators reported producing 18,820 tons of hazardous waste in Montana. By law, large quantity generators (over 2200 lbs/month) and small quantity generators (over 220 lbs but less than 2200 lbs/month) are required to report annually to the DHES on the type and amount of hazardous waste generated and where it was shipped.

This reporting requirement does not apply to conditionally exempt small quantity generators, who generate less than 220 lbs of hazardous waste per month. As a result, the data presented in this chapter do not include generation figures for conditionally exempt generators who, as a group, generate the smallest amount of waste among the three classes. (See Chapter 3 on conditionally exempt small quantity generators for additional information on this class of generators.)

Who are the major generators of hazardous waste in Montana?

Of the 18,820 tons of hazardous waste generated in 1992, 83% was generated by the five largest generators. Columbia Falls Aluminum Company is the largest generator, producing 7769 tons of waste composed primarily of spent potliner, a by-product of primary aluminum production (41% of total). Columbia Falls Aluminum is followed by two Billings oil refineries, Cenex and Exxon, that generate 3300 tons (17.5%) and 1968 tons (10.5%) of hazardous waste respectively. Transbas, a pesticide reformulator (1735 tons and 9% of the total) and the Conoco oil refinery (992 tons and 5% of the total) complete the list of top generators in Montana. **Appendix D** presents the data on which **Figure 1** is based, as well as waste generation data for the years 1986 through 1991.

II. Hazardous Waste Disposal

According to data reported to the DHES, in 1992, 73.5% (13,848 tons) of the hazardous waste generated in Montana was shipped out-of-state for management and disposal. The remainder of the waste (4980 tons) was managed or disposed of in-state. **Figure 2** identifies where hazardous waste generated in Montana was shipped. **Appendix E** presents the data on which Figure 2 is based, as well as waste disposal data for the years 1986 through 1992.

How is Montana's hazardous waste disposed of?

Figure 3 summarizes how the 13,848 tons of waste shipped out-of-state in 1992 was managed. The majority of the waste was landfilled (73.8%), primarily in Idaho). The second most commonly used management strategy was deepwell injection, comprising11.4% of the waste. While only 1.8% of the waste was incinerated, waste generated in Montana was incinerated in the states of Arkansas, California, Colorado, Minnesota, Indiana, Michigan, Missouri, Oklahoma, Tennessee, Oregon, Texas,

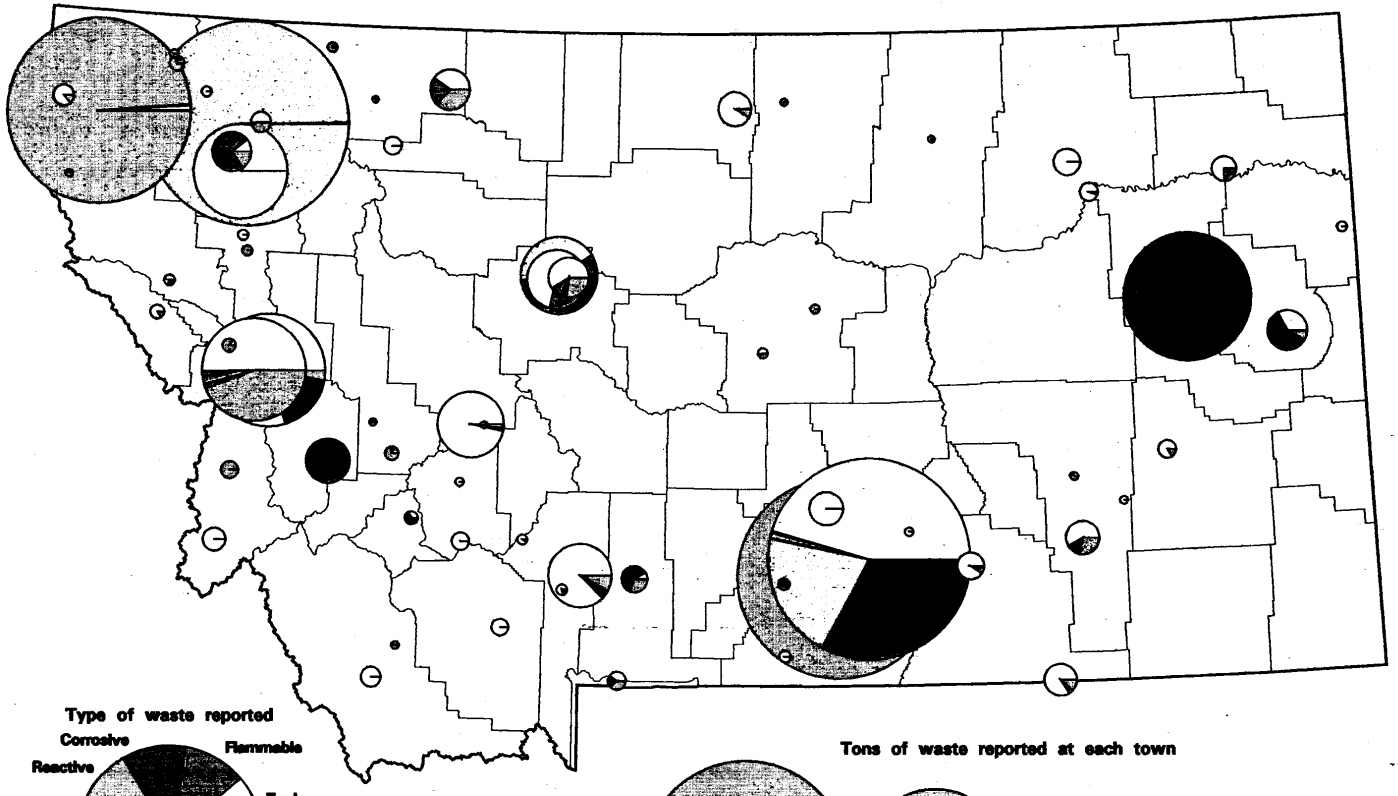
Utah, Wisconsin, and Washington. Across all management categories, 80.5% of the hazardous waste shipped from Montana was shipped to one of three states: Idaho, Oregon, or Texas. A list of the states in which Montana-generated waste was managed and disposed of is contained in **Appendix F.**

Of the 4,980 tons of waste managed in-state, most was either treated (62%) or recycled (27%) on-site. As a group, oil refineries are the generators who manage the largest amount of waste on-site. The remainder of the waste was either accumulated, disposed of in-state, or managed in another manner.

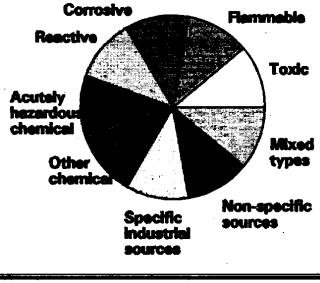
A description of the top 20 types of waste generated in 1992 and the constituents within each of these wastes is contained in **Appendix G.**

Figure 1

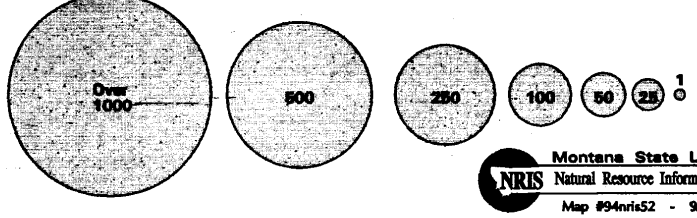
Hazardous Waste Reported to the Montana Solid & Hazardous Waste Bureau 1992



Type of waste reported



Tons of waste reported at each town



Montana State Library
NRIS Natural Resource Information System
Map #94nris52 - 9/15/93

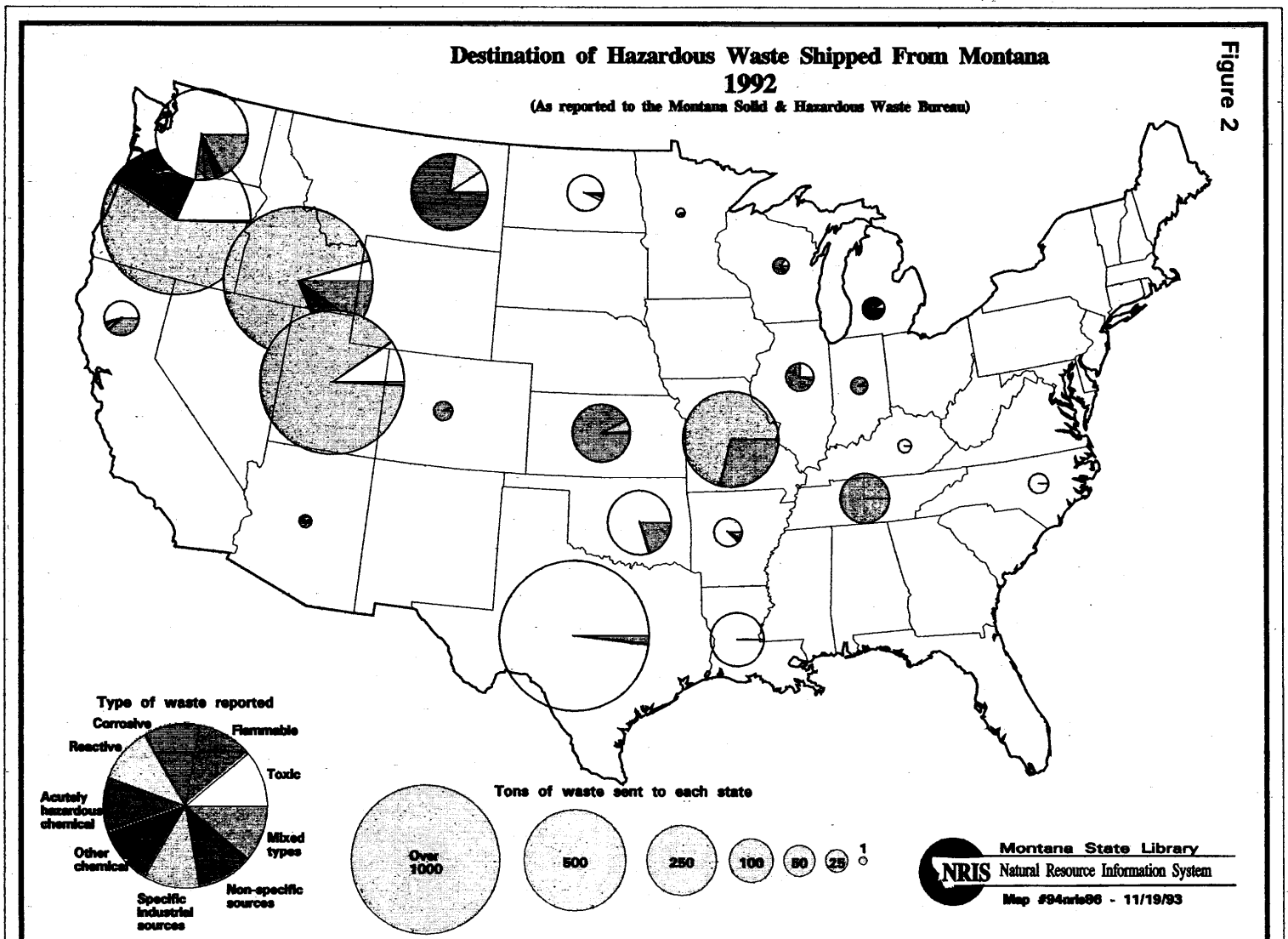
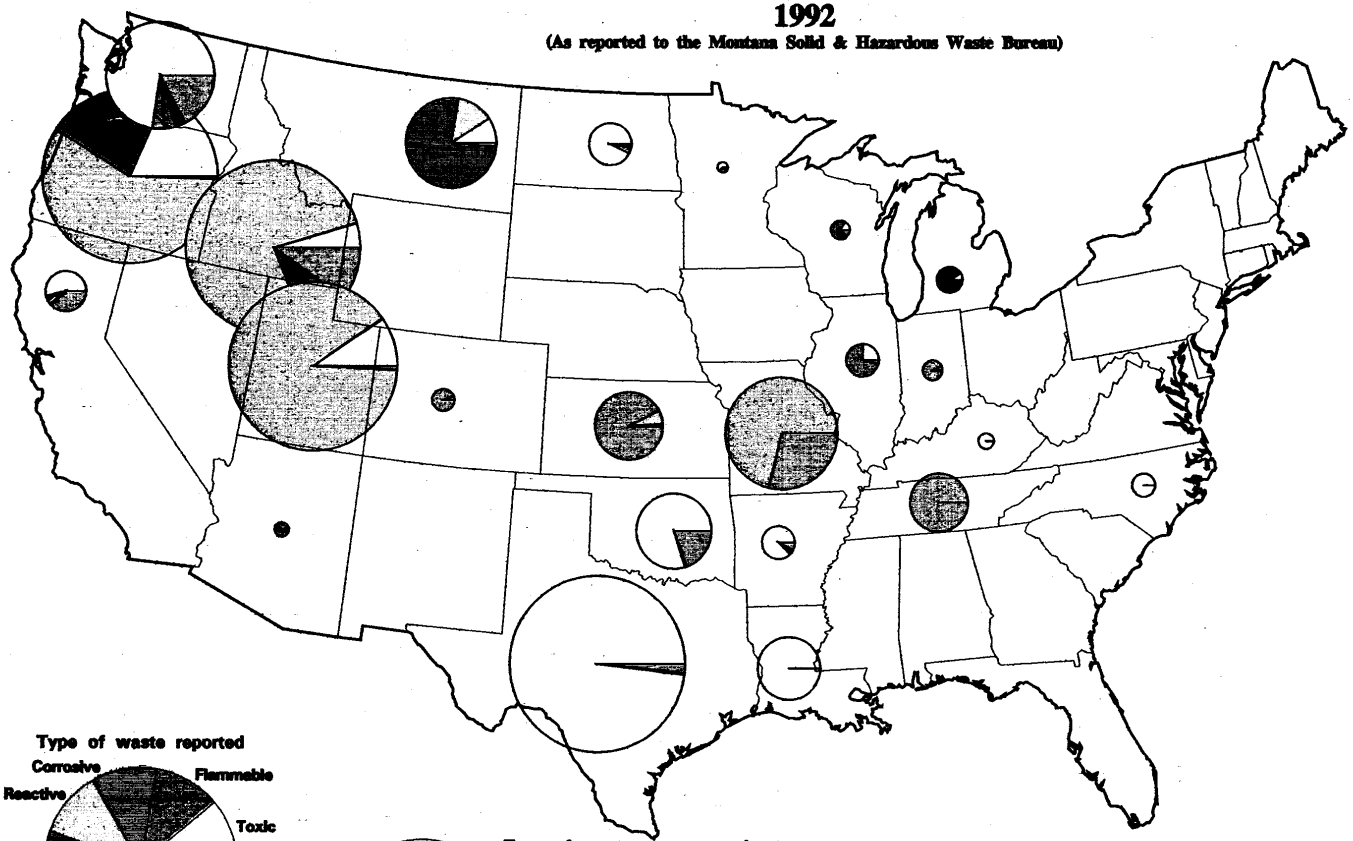
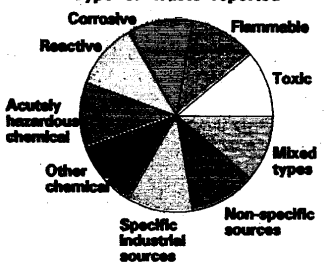

Destination of Hazardous Waste Shipped From Montana
1992
(As reported to the Montana Solid & Hazardous Waste Bureau)
Figure 2
Type of waste reported
Corrosive
Flammable
Reactive
Toxic
Acutely hazardous chemical
Mixed types
Other chemical
Non-specific sources
Specific industrial sources
Tons of waste sent to each state
Over 1000
500
250
100
50
25
1
Montana State Library
NRIS
Natural Resource Information System
Map #94nris86 - 11/19/93

Figure 2

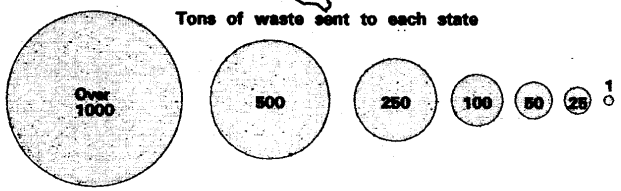
Destination of Hazardous Waste Shipped From Montana
1992
(As reported to the Montana Solid & Hazardous Waste Bureau)



Type of waste reported



Tons of waste sent to each state

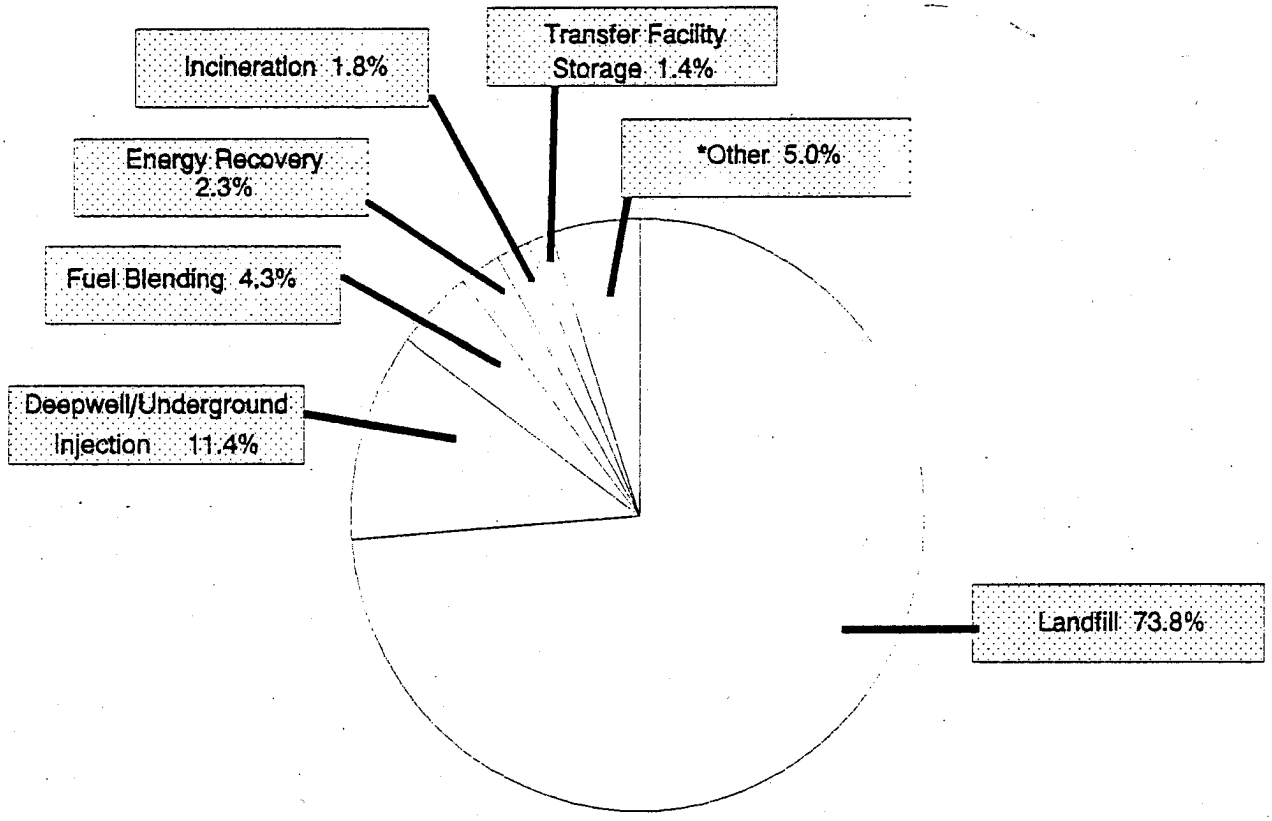


Montana State Library
NRIS Natural Resource Information System
Map #94nris66 - 11/19/93

Figure 3

State of Montana
Out-of-State Management of Hazardous Waste
Calendar Year 1992

The following summarizes information retrieved from Montana's 1992 hazardous waste reports related to the types of systems used by out-of-state facilities to manage waste received from Montana generators. The total waste shipped out-of-state was 13,848 tons.



Other - 5.0%

Aqueous Organic Treatment 1.2%
Small Generators Not Required to Report System Types 1.2%
Metals Recovery (For Reuse) 1.2%
Solvents Recovery .4%
Stabilization .4%
Other Treatment .2%
Other Recovery .2%
Aqueous Inorganic Treatment .1%
Other Disposal .1%

Chapter Two:
The Status and Adequacy of the Regulatory Framework

ISSUE: **Analyze the status and adequacy of the state hazardous waste management regulatory framework, including the standards established in the framework and the resources necessary to implement the framework.**

The Hazardous Waste Management Working Group divided this issue into two parts: Section I addresses the status of the hazardous waste management regulatory framework and Section II addresses whether the hazardous waste management regulatory framework is adequate.

I. What is the Status of the Hazardous Waste Management Regulatory Framework?

In order to assess the status of the state's hazardous waste management regulatory framework, it is first necessary to define what is meant by the terms "hazardous waste" and "regulatory framework."

What is "hazardous waste" and how does it differ from "toxic waste"?

The term "hazardous waste" is often used by the lay person interchangeably with the term "toxic waste" to broadly mean any substance that may pose a threat to human health or the environment. Commonly, these terms might encompass anything from PCB's and medical waste to waste oil, air emissions, pesticides, or spent potliners from primary aluminum production.

Under the regulatory framework, however, the terms "hazardous" and "toxic" are not interchangeable; each has a precise legal definition, and each of the forementioned substances is regulated by a different statute, with a different set of regulatory requirements.

See **Table 1** for an overview of various federal and state regulatory statutes and the substances they address.

While the Hazardous Waste Management Working Group (HWMWG) reviewed each of the statutes in Table 1, the focus of the SJR 34 study was on Subtitle C of the federal Resource Conservation and Recovery Act (RCRA) and the parallel state statute, the Montana Hazardous Waste and Underground Storage Tank Act (HWMA). Consequently, unless otherwise noted, the term "regulatory framework" means the HWMA and administrative rules, and the term "hazardous waste" means hazardous waste as defined under that statute and rule (the precise legal definition is discussed in a later section).

A. Background and History

Responsibility for development and operation of the Montana hazardous waste program is vested in the Department of Health and Environmental Sciences (DHES). The Montana Solid Waste Management Act, enacted in 1977, first granted specific hazardous waste regulatory powers to the DHES. This legislation was modeled after U.S. Congressional bills which were to become the federal Resource Conservation and Recovery Act of 1976. Later on, the decision was made to separate the state hazardous waste laws from solid waste laws. This decision resulted in the revision of the existing statute and its recodification into the Montana Hazardous Waste Management Act by the 1981 Legislature. While the Act has been amended several times since 1981, most notably by the addition of authority to regulate underground storage tanks, much of the authority in the current Montana Hazardous Waste and Underground Storage Tank Act (75-10-401 et seq., MCA) and rules adopted pursuant to that Act stem from the original 1981 legislation.

As embodied by statute, Montana's policy on hazardous waste management has been to maintain a program equivalent to but not more restrictive than required by the federal Resource Conservation and Recovery Act (RCRA). With several exceptions (for example, the regulation of boilers and industrial furnaces), the department by statute may not adopt rules that are more restrictive than those promulgated by the federal government.

Table 1: Regulatory Framework for Materials that Display Hazardous and Toxic Characteristics: An Overview

Federal Statute	State Statute	What is Regulated?	Examples
Resource and Conservation Recovery Act (RCRA) Subtitle C	MT Hazardous Waste and Underground Storage Tank Act (75-10-401, MCA)	Treatment, storage, transportation and disposal of **hazardous waste**; siting, design, operation, maintenance, monitoring, inspection, closure, and reclamation of facilities; corrective action; registration of generators and transporters	Large and small quantity generators; boilers and industrial furnaces; transporters
RCRA Subtitle D	MT Solid Waste Management Act (75-10-201, MCA)	Storage, treatment, recycling, recovery, transportation and disposal of **solid waste**	Household hazardous waste, medical waste
Clean Air Act	Clean Air Act of Montana (75-2-101, MCA)	Level, concentration and quantity of **emissions** from incinerators, boilers and industrial furnaces (BIF), etc.	BIF; solid waste incinerator; hazardous waste incinerator
Toxic Substances Control Act	None, program administered by the EPA	Manufacture, distribution, use and disposal of **chemical substances** that present unreasonable risk of injury to health or the environment	PCB's; asbestos in schools; indoor radon abatement
Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)	Montana Pesticides Act (80-8-101, MCA)	Registration, labeling, use, export, storage, disposal, transportation and recall of **pesticides**	Agricultural pesticides

B. General Statutory Authority and Responsibility

How is hazardous waste regulated under the several statutes that constitute the regulatory framework?

State statute provides the logical place to begin an assessment of DHES's authority and responsibility for hazardous waste management. The Montana Hazardous Waste and Underground Storage Tank Act provides general permissive powers to the DHES, stating in 75-10-404(1), MCA that the

department may:

(a) administer and enforce the provisions of this part, rules implementing this part, and orders and permits issued pursuant to this part;

(b) conduct and publish studies on hazardous wastes and hazardous waste management;

(c) initiate, conduct, and support research, demonstration projects, and investigation, as its resources may allow, and coordinate state agency research programs pertaining to hazardous waste management;

(d) accept and administer grants from the federal government and from other sources, public and private; and

(e) abate public nuisances that affect the public health and welfare or the environment and that arise from or in connection with the past or present handling or disposal of any hazardous waste or regulated substance" (emphasis added).

Section 75-10-404(2), MCA, provides guidance to the DHES on the relationship between the Montana Hazardous Waste and Underground Storage Tank Act and other related state statutes:

The department shall integrate all provisions of this part with other laws administered by the department to avoid unnecessary duplication. Furthermore, the department shall coordinate its activities under this part with the program administered by the department of agriculture under the Montana Pesticides Act, the programs administered by the department of state lands related to mining and mine reclamation, the program administered by the department of public service regulation related to hazardous material transportation, and provisions of the Montana Major Facility Siting Act administered by the department of natural resources and conservation. The integration and coordination shall be effected only to the extent that it can

be done in a manner consistent with the goals and policies of this part and the other laws referred to in this section."

A great deal of the regulatory framework for hazardous waste is based upon administrative rules adopted by the DHES rather than statute enacted by the legislature. The Montana Hazardous Waste and Underground Storage Tank Act grants the DHES authority to adopt, amend, or repeal rules governing hazardous waste, including but not limited to the following:

(a) identification and classification of those hazardous wastes subject to regulation and those that are not;

(b) requirements for the proper treatment, storage, transportation, and disposal of hazardous waste;

(c) requirements for siting, design, operation, maintenance, monitoring, inspection, closure, postclosure, and reclamation of hazardous waste management facilities;

(d) requirements for the issuance, denial, reissuance, modification, and revocation of permits for hazardous waste management facilities;

(e) requirements for corrective action within and outside of facility boundaries and for financial assurance of that corrective action;

(f) requirements for manifests and the manifest system for tracking hazardous waste and for reporting and recordkeeping by generators, transporters, and owners and operators of hazardous waste management facilities;

(g) requirements for training of facility personnel and for financial assurance of facility owners and operators and for liability of guarantors providing financial assurance;

(h) requirements for registration of generators and transporters;

(i) establishing a schedule of fees and procedures for the collection of fees for:

(i) the filing and review of hazardous waste management facility permits as provided in 75-10- 432;

(ii) hazardous waste management as provided in 75-10-433;

(iii) the reissuance and modification of hazardous waste management facility permits; and

(iv) the registration of hazardous waste generators;

(j) a schedule of fees to defray a portion of the costs of establishing, operating, and maintaining any state hazardous waste management facility authorized by 75-10-412;

(k) requirements for availability to the public of information obtained by the department regarding facilities and sites used for the treatment, storage, and disposal of hazardous wastes;

(l) procedures for the assessment of administrative penalties as authorized by 75-10-424; and

(m) other rules which are necessary to obtain and maintain authorization under the federal program.

C. Substances Regulated Under the HWMA

What materials are regulated by the DHES under the Montana Hazardous Waste and Underground Storage Tank Act? A three-part test provides a general guide for answering this question. In order for a material to be regulated, each of the following questions must be answered affirmatively.

1. Is it a "waste"?

A "waste" is any discarded material that is not excluded from regulation (see list of exclusions provided in 16.44.304, ARM) or that, following a review by the department, is not reclassified as nonhazardous (16.44.302, ARM). The definition of "waste" hinges upon the meaning of the term "discarded," which also is defined by rule. A waste is discarded when it is:

a) abandoned by being: i) disposed of; ii) burned or incinerated; or, iii) accumulated, stored, or treated (but not recycled) before being disposed of, burned or incinerated;

b) Recycled, or accumulated, stored or treated before recycling: i) in a manner constituting disposal; ii) burned for energy recovery; iii) reclaimed; or iv) accumulated speculatively; or

c) considered inherently waste-like (see defined list and criteria in 16.44.302, ARM).

A material is not a waste when it can be shown to be recycled by being: 1) used or reused as an ingredient in an industrial process to make a product; 2) used or reused as an effective substitute for a commercial product; or 3) returned to the original process from which it was generated, without first being reclaimed. In addition, the following materials are wastes, even if the recycling involves use,

reuse, or return to the original process: 1) materials used in a manner constituting disposal, or used to make products applied to the land; 2) materials burned for energy recovery, used to produce a fuel, or contained in fuels; 3) materials accumulated speculatively; or, 4) materials specifically listed as hazardous by rule.

2. Is it hazardous?

As provided in 16.44.303, ARM, a waste (defined above) is hazardous if it is not excluded from regulation and it meets any of the following criteria:

a) exhibits any of the characteristics of hazardous waste (ignitability, corrosivity, reactivity, toxicity), with some exceptions;

b) is listed in 16.44.330 through 16.44.333 ARM (which lists the wastes EPA has classified as hazardous); or

c) is a mixture of any waste and one or more hazardous wastes listed in 16.44.330 through 16.44.333, ARM, unless the resulting mixture no longer exhibits characteristics of hazardous waste or it meets a list of exemptions.

3. Is it a regulated quantity?

The hazardous waste regulatory framework associates risk to public health and the environment in relation to the amount of hazardous waste generated. Consequently, some establishments that generate material that meets both the definition of "waste" and the definition of "hazardous" may face fewer regulations than a generator who generates larger quantities of the same waste. the DHES, through its administrative rules, recognizes three categories of generators based upon monthly rates of hazardous waste generation and on-site storage (16.44.401, ARM).

a) Conditionally Exempt Generator. A conditionally exempt generator is a generator of hazardous waste who generates in a calendar month no more than 100 kilograms (220 lbs) of hazardous waste.

Of the three generator categories, conditionally exempt generators are subject to the least regulation. A

conditionally exempt generator is required to make a determination that the waste is hazardous and must keep records of any test results or waste analyses for at least three years, but is not required to register as a generator.

A conditionally exempt generator of hazardous waste is allowed to manage and dispose of waste in a manner that is not allowed of larger generators. For example, a conditionally exempt generator may dispose of hazardous waste in a licensed solid waste management facility or mix hazardous and non-hazardous waste.

b) Small Generator. A small generator of hazardous waste is a generator who generates in a calendar month between 100 kilograms and 1000 kilograms of hazardous waste.

The regulations that must be complied with increase as the amount of waste generated increases. A small generator is required to make a determination that the waste is hazardous and then register and obtain an EPA identification number. A small generator must comply with accumulation, recordkeeping and annual reporting requirements. Small generators are also subject to packaging, labeling and marking requirements if the waste is shipped off-site.

c) Large Generator. A large generator of hazardous waste is a generator who generates at any time in a calendar month, or accumulates at any time:

- more than 1000 kilograms (2200 lbs) of hazardous waste;
- more than 1 kilogram (2.2 lbs) of acute hazardous waste (**acute** hazardous waste is hazardous because of its toxicity and is on a special list (the P-list) of hazardous waste); or
- more than 100 kilograms (220 lbs) of any residue, contaminated soil, waste or debris resulting from a spill or release of acute hazardous waste.

Large generators are subject to the same types of regulations as small generators, but have additional and more stringent requirements. For a list of specific requirements for each category of generator, see 16.44.402, ARM.

D. Exclusions: What Is Not Regulated Under the HWMA

The administrative rules provide an extensive list of wastes, and processes that produce waste, that might otherwise be considered hazardous, but are excluded from regulation under the Montana Hazardous Waste and Underground Storage Tank Act and under the federal Resource Conservation and Recovery Act (RCRA).

Specifically, under 16.44.304, ARM, the following wastes and waste processes are excluded from regulation:

(1) agricultural crops or animal manure returned to the soil as fertilizer;

(2) irrigation return flows;

(3) radioactive materials subject to regulation under Title 75, chapter 3;

(4) in-situ mine wastes;

(5) coal and uranium wastes subject to the Montana Strip and Underground Mine Reclamation Act;

(6) domestic sewage that passes through a sewer system to a publicly owned treatment works for treatment;

(7) industrial waste water subject to regulation under water quality laws;

(8) hazardous waste that is generated in a product or raw material storage tank, a product or raw material transport vehicle or vessel, a product or raw material pipeline;

(9) pulping liquor that is reclaimed and reused;

(10) spent sulfuric acid used to produce virgin sulfuric acid;

(11) secondary materials that are reclaimed and returned to the original process in which they were generated where they are reused in the production process, provided that a series of conditions are met;

(12) when used as fuel, coke and coal tar from the iron and steel industry that contains or is produced from decanter tank tar sludge;

(13) spent wood preserving solutions that have been reclaimed and are used for their original intended purpose; and

(14) wastewaters from the wood preserving process that have been reclaimed and are reused to treat wood (emphasis added).

NOTE: These rules have been paraphrased and the emphasis added. See ARM's for actual language of the rule.

Under 16.44.304, ARM, the following wastes and waste processes are excluded from regulation under the Montana Hazardous Waste and Underground Storage Tank Act, but may be regulated under solid waste statutes (paraphrased):

(1) household hazardous waste;
(2) fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels (with some exceptions);
(3) drilling fluids and other wastes associated with the exploration, development, or production of crude oil, natural gas, or geothermal energy;
(4) wastes from the extraction, benefication of ores and minerals (including coal, phosphate rock and overburden from the mining of uranium ore), except for facilities that burn or process hazardous waste. (20 types of mining wastes are specifically mentioned under this exemption.);
(5) cement kiln dust, with some exceptions for boilers and industrial furnaces;
(6) waste which consists of discarded arsenical-treated wood or wood product which meets several tests and conditions;
(7) wastes that fail the test for toxicity characteristics because chromium is present or are listed in 16.44.330-16.44.333 ARM, due to the presence of chromium, which do not fail the test for toxicity characteristic for any other constituent;
(8) buffing dust, sewer screenings, and waste water treatment sludges generated from several subcategories of the leather tanning and finishing industry;
(9) waste scrap leather from the leather tanning industry, shoe manufacturing industry and other leather product manufacturing industries;
(10) wastewater treatment sludges from the production of TiO_2 pigment;
(11) petroleum-contaminated media and debris that fail the test for certain toxicity characteristic constituents and are subject to corrective action under underground storage tank rules; and,
(12) used chloroflourocarbon refrigerants from totally enclosed heat transfer systems, including air conditioners and refrigeration units.

The Administrative Rules also contain a series of conditions and exemptions for waste samples that are

collected for the sole purpose of testing to determine the waste's characteristics or composition.

E. Examples of How the Regulatory Framework Applies to Selected Situations

The following four examples are provided in order to better illustrate how the hazardous waste management regulatory framework is applied.

1. Ross Management, Inc.

Ross Management, Inc. has proposed to site a facility in Baker to burn used electrical transformers to recover the metals for recycling. The transformers contain mineral oil with PCB's up to 50 parts per million. How does the regulatory framework apply to this proposal?

Q: Is the waste hazardous?

A: No. In order to be regulated as a hazardous waste, a material must be: 1) a waste; 2) hazardous; and 3) of sufficient quantity to be regulated. Because PCB's do not meet the definition of hazardous provided for in administrative rules, the Ross Management facility would not be regulated under the authority of the Montana Hazardous Waste and Underground Storage Tank Act.

Q: How would Ross Electric be regulated?

A: While PCBs are not a hazardous waste, they do meet the definition of "waste" under the Solid Waste Management Act (75-10-201, MCA), and would be regulated by the DHES under the authority of solid waste statutes.

Also, because Ross's proposal involves incineration, an air quality permit from the DHES would be required.

Finally, the Ross proposal may be regulated by EPA under the Toxic Substances Control Act (TSCA). EPA's TSCA regulations provide an exclusion for PCB products that contain less than 50 ppm PCBs. However, in order to be eligible for this exclusion, fuel containing less than 50 ppm PCBs cannot be burned in nonindustrial boilers and furnaces. EPA currently is investigating whether Ross Management's proposal qualifies for this exemption or not.

2. Ash Grove Cement Kiln

The Ash Grove Cement Company has proposed replacing up to 20% of the fossil fuels it burns for its cement kiln in Montana City with hazardous waste-derived fuels (15,000 tons). How does the regulatory framework apply to this proposal?

Q: Is the hazardous waste-derived fuel that Ash Grove proposes to burn a regulated quantity of waste that is hazardous?

A: Yes. Because what Ash Grove proposes to burn meets both the definition of "waste" and the definition of "hazardous," and because it is of sufficient quantity to be regulated, the Ash Grove proposal triggers the regulatory framework of the Montana Hazardous Waste and Underground Storage Tank Act. Ash Grove will be required to obtain a hazardous waste permit to store and treat hazardous waste, must comply with the regulations and permitting requirements for boilers and industrial furnaces, and must obtain an air quality permit to burn hazardous waste.

3. Crown Butte New World Mine

Crown Butte has applied for an operating permit under the Montana Metal Mine Reclamation Act (82-4-301, MCA) to site and operate a mine near Cooke City. The project would mine gold, silver, and copper reserves with an estimated average annual production rate of 540,000 tons of ore over a 10 to 15 year period. As a result, about 5.5 million tons of mine tailings that potentially contain dissolved heavy metals and acid leachate would be placed in a 72 acre impoundment. How does the regulatory framework apply to this proposal?

Q: Are the mine tailings a hazardous waste that would be regulated under the Montana Hazardous Waste and Underground Storage Tank Act?

Is the hazardous waste regulatory framework adequate?

A: No. 16.44.304(2)(d), ARM provides an exclusion from the requirements of the Montana Hazardous Waste and Underground Storage Tank Act for these mine wastes.

The mine tailings and impoundment would be regulated under the Montana Metal Mine Reclamation Act.

4. Used Motor Oil

A local auto mechanic may change the oil in dozens of cars per week. How does the regulatory framework apply to used motor oil?

Q: Is used motor oil hazardous?
A: It depends. To determine whether or not used motor oil is hazardous because of the existence of heavy metals, it is necessary to test the oil using the Toxicity Characteristic Leaching Procedure. Generally, if the oil test is positive, then it is regulated as a hazardous waste and if the oil test is negative, then it is regulated as a solid waste. However, under the Montana Hazardous Waste and Underground Storage Tank Act, used oil that exhibits one or more characteristics of hazardous waste but is recycled is exempt from regulation, and in some instances, used oil that is burned for energy recovery is regulated under different federal requirements.

II. Is the Hazardous Waste Management Regulatory Framework Adequate?

The question of whether the hazardous waste regulatory framework is adequate is subjective: reasonable people might disagree over the answer depending upon their perception, philosophy, or attitude. In order to establish a more objective basis for evaluating the adequacy of the regulatory framework, the Hazardous Waste Management Working Group (HWMWG) established a set of sub-issues that the group collectively thought were components of an adequate regulatory framework. These sub-issues were: 1) reporting requirements for hazardous waste generators; 2) exemptions from the regulatory framework; 3) enforcement and compliance; 4) DHES funding and staffing; 5) laboratory testing capability; 6) regulations; 7) public participation in the permitting process; 8) adequacy of EPA standards; and 9) law violator provisions.

The assumption was that if the members of the HWMWG could come to a consensus on each of these sub-issues, then the group should be able to agree on whether or not the regulatory framework for hazardous waste is adequate. As it turned out, not all members of the HWMWG

could agree on what was adequate for each issue, and thus were unable to make a consensus recommendation on the adequacy of the hazardous waste management regulatory framework as a whole.

The remainder of this chapter summarizes the HWMWG's analysis and discussion of each of the nine sub-issues.

A. Reporting Requirements for Hazardous Waste Generators

1. Current Requirements

Under the authority of the federal Resource Conservation and Recovery Act, the Environmental Protection Agency (EPA) requires large and small quantity hazardous waste generators to report on the types and quantities of hazardous waste they generate. In addition, for those wastes shipped off-site, the generator must report the receiving facility, its EPA identification number, and the type and amount of waste shipped. The generator must also report the same information for the transporter who ships the waste. Conditionally exempt small quantity generators (CESQG) of hazardous waste are not subject to these reporting requirements.

In addition to reporting waste management activities, the EPA requires generators to report on efforts to minimize the volume and toxicity of hazardous waste generated, and the success of those efforts.

State law mirrors federal requirements except that the state requires a generator to file a report on an annual rather than the biennial basis required by the EPA.

The purposes of reporting requirements are twofold: First, to insure cradle to grave compliance with hazardous waste laws; and second, to provide information on the types and amounts of hazardous waste generated.

2. HWMWG Discussion

The HWMWG identified and discussed in detail two issues related to reporting requirements. First, the group considered whether reporting requirements should be extended to CESQGs. Because the state has little reliable data on the type and amount of waste generated by

conditionally exempt generators, many members of the group believed valuable information could be gained by placing reporting requirements on CESQGs. However, the group decided this proposal was impractical because of the large number of CESQGs and the immense increase in workload this would create for staff of the Department of Health and Environmental Sciences (DHES). In addition, some working group members were opposed to placing additional regulatory requirements on small businesses.

The HWMWG also discussed mechanisms for verifying the information submitted in annual reports. The focus of this discussion was a proposal that transporters be required to submit a copy of each shipping manifest to the state.

Under current requirements, a manifest is required to accompany hazardous waste as it passes from generator to transporter to hazardous waste management facility. The facility manager is then required to return a copy of the manifest to the generator. It is not required that a copy of the manifest be submitted to the state. The purpose of the manifest system is to track the waste from cradle to grave and to insure that information on the type and characteristics of the waste is available on-site in case of an accident.

Proponents of the proposal to require that manifests be submitted to the state argued that in the 31 states that compile manifest data, information from manifests is used tosupplement reporting requirements, support capacity assurance planning and enforcement activities, and provide a means for verifying the information submitted in annual reports.

Other members of the group argued that while the benefits were unquestionable, the DHES did not have the staff to do the input, filing, analysis, and quality assurance work necessary to make information contained in the manifests useable. In many of the states that compile manifest data, the time involved in managing the data has been a barrier to its use.

4. Conclusion

The members of the HWMWG were unable to come to agreement on the proposal to require that a copy of a manifest be submitted to the state. Except for the disagreement over additional manifest requirements, the

HWMWG generally found the existing reporting requirements to be sufficient.

B. Exemptions from the RCRA Hazardous Waste Management Regulatory Framework

1. Current Requirements

Under the Administrative Rules of Montana, a number of wastes and processes that produce waste are excluded from regulation under the Montana Hazardous Waste and Underground Storage Tank Act. In some instances, wastes are excluded from hazardous waste regulations because they are regulated under different statutory authority. These exclusions are outlined in **Table 2**. In other instances, waste are excluded from hazardous waste regulations because they are reclaimed or reused, or they are excluded for other reasons provided they meet specific conditions. These exclusions are outlined in **Table 3**.

TABLE 2: ARM 16.44.304 Exclusions Regulated by Other Agencies

EXCLUSION	REGULATING AGENCY	REGULATING AUTHORITY
1(h) irrigation return flow	DHES - Water Quality Bureau	Title 75, Ch. 5
1(c) source, special nuclear or nuclear byproducts wastes	Nuclear Regulatory Commission DHES - Occupational & Radiological Health Bureau	Title 10 Code of Federal Regulations; Title 75, Ch. 3
1(d) materials subjected to in-situ mining techniques	Department of State Lands DHES - Water Quality Bureau	Title 75, Ch. 5; Title 82, Ch. 4
1(e) overburden from coal and uranium mining	Department of State Lands	Title 82, Ch. 4
1(f) domestic sewage	DHES - Water Quality Bureau	Title 75, Ch. 5 & 6; Title 7, Ch. 13
1(g) point source discharge of industrial wastewater	DHES - Water Quality Bureau	Title 75, Ch. 5
2(a) household wastes	DHES - Solid Waste Program	Title 75, Ch. 10 (MT Solid Waste Management Act)
2(b) fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste generated primarily from combustion of coal or other fossil fuels	DHES - Air Quality Bureau DHES - Solid Waste Program	Title 75, Ch. 2; Title 75, Ch. 10
2(c) drilling fluids, produced waters and other wastes associated with exploration, development and production of crude oil, natural gas or geothermal energy	DHES - Oil and Gas Division	Title 82, Ch. 11
2(d) waste from extraction, beneficiation and processing of ores and minerals (Bevill amendment)	Department of State Lands DHES - Water Quality Bureau	Title 82, Ch. 4 Title 75, Ch. 5
2(e) cement kiln dust waste (except those facilities which burn hazardous waste)	Department of State Lands DHES - Air Quality Bureau DHES - Water Quality Bureau	Title 75, Ch. 2; Title 77, Ch. 3; Title 82, Ch. 4 Title 75, Ch. 2 Title 75, Ch. 5
2(f) waste from discarded arsenical-treated wood and wood products	DHES - Solid Waste Program	Title 75, Ch. 10
2(g) wastes which fail the toxicity characteristics because chromium is present but do not fail the test for any other characteristic	DHES - Solid Waste Program	Title 75, Ch. 10
2(h) petroleum-contaminated wastes subjected to corrective action	DHES - Underground Storage Tank Program EPA - Office of Underground Storage Tanks (OUST) DHES - Solid Waste Program	Title 75, Ch. 10 & 11 42 USC 6901-6987 (RCRA) Title 75, Ch. 10

TABLE 3

RECLAIMED AND REUSED MATERIALS	EXCLUSIONS WITH CONDITIONS
1(a) agricultural wastes (manure and plant residue) returned to the soil as fertilizers or soil conditioners 1(i) pulping liquor that is reclaimed and reused 1(j) spent sulfuric acid used to produce virgin sulfuric acid 1(k) secondary materials reclaimed and returned to the original process in a closed loop recycling system 1(l) coke and coal tar from the iron and steel industry which contains decanter tank tar sludge (K087) when used as fuel 1(m) spent wood preserving solutions reclaimed and reused to treat wood 1(n) wastewaters from wood preserving processes that are reclaimed and reused to treat wood 2(j) used chloroflourocarbon refrigerants from totally enclosed heat transfer equipment that is reclaimed for further use	1(h) a hazardous waste generated in an enclosed unit until it exits the unit Explanation: An example of this exclusion would be a "hot tank" used to clean radiators. These tanks typically contain a solution of sodium hydroxide with a pH of over 12.5. Sludge that forms on the tank bottom may have a pH of 12.5 or more and contain high levels of lead. The sludge, while in the tank, is excluded from hazardous waste regulations. The sludge would fall under hazardous waste regulation once it was removed from the tank. Hazardous waste that remains in a unit more than 90 days after the unit ceases to be operational is subject to regulation. Hazardous waste generated in a surface impoundment is not included in this exclusion. 2(i) ground water that is hazardous only because it exhibits the toxicity characteristic D018-D043 and is reinjected through an underground injection well for free phase recovery... Explanation: This exemption expires January 1993 3(a-c) sample collected for analytical testing Explanation: Samples for analytical testing are excluded during transportation to and from the lab; when the sample is being stored before transport or testing; or when the sample is being stored by the lab after testing for a specific purpose (an example of a specific purpose would be an enforcement action where further testing of the sample may be necessary). Requirements for the exclusion include complying with applicable shipping requirements (i.e., DOT or US Post Office); assuring that the sample is properly packaged to prevent any spills or leaks; and that information concerning the sample collector, lab, and sample accompanies the sample during transport. 4(a-d) samples collected for treatability studies (within certain time and quantity limits) Explanation: Transport and storage conditions for exclusion of samples collected for treatability studies are the same as for samples collected for analysis. In addition, there are record keeping requirements and limits on the quantity of waste that can be collected for treatability studies. 5(a-k) samples undergoing treatability studies and the testing facility conducting the studies (within certain time and quantity limits) Explanation: Conditions for exemption from requirements of this exclusion include notification to DHES that treatability studies will be conducted, quantity limits for storage and for treatment rates (store no more that 1,000 kg at one time and treat no more than 250 kg/day,) disposal restrictions, and record keeping requirements. This exemption lasts for no more than 90 days from the completion of the treatability study or no more than 1 year from the shipment of the sample to the testing facility.

2. HWMWG Discussion and Conclusion

After reviewing and discussing the exemptions described in Tables 2 and 3, the HWMWG concluded that the regulatory framework is complex, and that it was not possible for the group to evaluate the adequacy of regulations under statutes other than the Montana Hazardous Waste and Underground Storage Tank Act. Because most of the excluded wastes and processes are regulated under other statutes, the members of the group agreed to propose no changes to the exemptions provided under current law.

C. Enforcement and Compliance

1. Current Status of the Hazardous Waste Management Program

The Montana Hazardous Waste and Underground Storage Tank Act provides the DHES with a number of legal tools for enforcing the requirements of the statute, including a criminal penalty (up to $25,000 per violation or 3 years imprisonment), a civil penalty (up to $10,000 per day of violation) and an administrative penalty (up to $10,000 per day, not to exceed $100,000). The department also has the authority to make on-site inspections, issue clean-up orders, and to take an action seeking injunctive relief. During fiscal year 1993, the Hazardous Waste program conducted a total of 158 compliance evaluation inspections. This total includes inspections of all types of generators, treatment, storage and disposal facilities, financial and non-financial record reviews, and follow-up on citizen complaints.

Table 4 summarizes the number of each type of enforcement action taken by the Hazardous Waste program during FY 1993. Of the enforcement actions taken, 77% (42 of 54) were informal actions or warning letters.

Table 4.Summary of Hazardous Waste Enforcement Actions for FY 1993

Type of Action	#
Informal/Warning Letters	42
Legal Referrals	5
Civil/Criminal Actions	4
Administrative Orders	3
EPA Referrals	0
TOTAL	54

2. Current status of the Air Quality Division

Because a facility that burns hazardous waste must have an air quality permit as well as a hazardous waste license from the DHES, the HWMWG decided to evaluate some components of the Air Quality Division (AQD). The AQD is authorized by the Clean Air Act of Montana to seek criminal penalties (up to $10,000 per violation or 2 years imprisonment), civil penalties (up to $10,000 per day of violation) and administrative penalties (up to $10,000 per day, not to exceed $80,000). The department also has the authority to make on-site inspections and to seek injunctive relief.

The AQD conducted a total of 47 compliance inspections during fiscal year 1993. All major sources of criteria air pollutants were inspected. In addition to inspections, source tests and emission reports were reviewed to assure that all sources were operating in compliance with their permit limits and an inventory of the regulated emissions from all sources was compiled.

The enforcement actions taken by the AQD from 1991 to 1993 are summarized **Table 5**.

The AQD has stepped up its enforcement activities in recent years. The number of judicial cases which have been filed have been as high as 9 in 1990. The number of judicial cases resolved has varied from 2 in 1990 to 10 in 1991. The amount of the penalties recovered has also increased over the time period.

Table 5. Summary of Enforcement Actions for 1991-93

	1991	1992	1993
Citations	52	93	61
Legal Referrals	8	4	6
Judicial Cases Filed	5	8	1
Judicial Cases Resolved	6	10	3

3. HWMWG Discussion

The HWMWG asked Don Vidrine, DHES Hazardous Waste Program Manager, to explain how compliance inspections are conducted. Mr. Vidrine reported that the program prioritizes compliance inspections based on a series

of criteria that include past compliance, environmental setting, size of the facility, amount of waste generated, and types of waste. Based on these criteria, the program assigns numerical scores to each generator in order to prioritize inspections during a given year.

Mr. Vidrine said four staff members are assigned to the enforcement program. The length of time it takes to do an inspection is variable, ranging from less than a day to up to 2.5 days in the case of a large facility such as Columbia Falls Aluminum. The time involved in an inspection includes more than the time staff are physically on-site; time is also required for preparation, travel, report writing, and follow-up. If a violation is noted, an inspector recommends an appropriate enforcement action to the program manager.

Mr. Vidrine also described the hazardous waste program's enforcement process. The Program Manager is responsible for initiating an enforcement action. He said that most violations are minor and can successfully be addressed through a warning letter or notice of violation. The department's normal procedure is to first work informally with a violator in order to gain compliance. Most violations do not result in a penalty.

A more formal enforcement action, such as a clean-up order or penalty, is taken in instances where there has been a repeated violation, attempts at seeking compliance informally have failed, when there is a threat to human health or the environment, or when the violation is the result of negligence. The decision to pursue a formal enforcement action (anything more than a notice of violation seeking corrective action), must be submitted to and approved by the Department Director.

4. HWMWG Conclusion

The members of the Hazardous Waste Management Working Group agreed to the following consensus recommendation on enforcement:

As a part of its enforcement study, the Environmental Quality Council should evaluate the enforcement and monitoring programs of the Air Quality Division and Waste Management Division of the Department of Health and Environmental Sciences.

D. DHES Funding and Staffing

Laws are not self-executing. Without effective implementation by the executive branch of government, the goals and objectives of policymakers will not be carried out successfully. While a number of factors influence the willingness and ability of an agency to implement a program, the need for resources to complete the task at hand is probably the most critical. The following sections analyze the budget and staffing levels for the Hazardous Waste program and Air Quality Division.

1. Budget

a. Hazardous Waste Program

The hazardous waste program has no general fund money. The program is funded primarily through grants from the EPA that require a matching state contribution of 25%. For the last six years, the state match has come from the interest income from the Resource Indemnity Trust Fund (RIT). **Table 6** outlines DHES's applications and awards from EPA since 1988. An examination of that data reveals two trends: 1) the amount requested and rewarded has increased every year except 1988-89; and, 2) since 1991, EPA has failed to award the amount requested. In 1993, the difference between the application and award was nearly $100,000.

In August 1994, EPA notified the Department of Health and Environmental Sciences that it is projecting a reduced hazardous waste grant allocation for Montana for fiscal years 1995 through 1997. The grant allocations for each state in the region are being revised, largely because the impending authorization of Wyoming's hazardous waste program and an EPA goal of achieving a more representative allocation of funds given the universe of RCRA facilities in each state. The revised allocations for Montana are as follows:

Current Base	$446,000
FY 1995	$437,000
FY 1996 Target	$402,000
FY 1997 Target	$348,000

The 1993 Legislature provided a new mechanism for increasing funding for the hazardous waste program. As a result of HB 592, the DHES is authorized to assess fees on the filing and review of hazardous waste management facility permits and permit modifications. According to the fiscal note accompanying the bill, as a result of the fees the Department anticipates additional new revenue of $253,740 in FY 94 and $43,740 in FY 95. Of the total for FY 94, $200,000 is anticipated to come from permitting fees for the Ash Grove and Holnam cement kiln applications to burn hazardous waste as a fuel. The additional revenue has been appropriated to support two temporary environmental specialists and contracted services to process the Holnam and Ash Grove permit applications.

Table 6. Hazardous Waste Grant Applications and Awards, Fiscal Years 1988 to 1993

Fiscal Year	Grant Application	Grant Award
FY 88	**510,585**	**510,585**
EPA	382,939	382,939
RIT	127,646	127,646
FY 89	**494,667**	**494,667**
EPA	371,000	371,000
RIT	123,667	123,667
FY 90	**506,392**	**506,392**
EPA	379,794	379,794
RIT	126,598	126,598
FY 91	**628,010**	**595,964**
EPA	471,007	446,973
RIT	157,003	148,991
FY 92	**840,096**	**693,833**
EPA	630,072	520,375
RIT	210,024	173,485
FY 93	**841,798**	**742,130**
EPA	631,348	556,598
RIT	210,450	185,532

b. Air Quality Division

The department's Air Quality Division (AQD) has historically been funded with a combination of general fund and federal grant dollars. To receive the federal air pollution control grant, the state provided a minimum of 25% match and met a "maintenance of effort" requirement. Passage of the Federal Clean Air Act Amendments of 1990 (FCAA) changed funding for the AQD, and for most other state air programs. First, the minimum state match for the federal grant was increased to 40%, effective in FY94. Second, a new permit fee program was required to be implemented by all states to support an operating permit program and related costs. With support from the regulated community, the AQD obtained authority from the 1991 Legislature to start a fee program. Since 1991, the fee program has continued its support of existing permit and compliance programs and it has funded the development of the new operating permit program.

With the advent of the fee program, the Legislature has chosen to reduce general fund support to the program. The maintenance of state support to the AQD, as well as the increased match requirement (25% to 40%), have been met through fees from the regulated community. A potential problem has been raised by the EPA with using fees (operating permit fees) as match for the federal grant. If EPA's interpretation of the FCAA is maintained, the AQD will be unable to match the entire federal grant and will face a significant funding shortfall.

Table 7 shows the funding patterns for the AQD over the last six years.

2. Staffing

a. Hazardous Waste Program

As of September 1993, the Hazardous Waste program had 16.97 positions authorized, of which 12.75 were filled. Of the four unfilled positions, two were vacant and two had yet to be classified (they are funded and authorized as a result of HB 592, discussed above). **Table 8** summarizes the program's positions and the length of time each has been filled.

Table 7. Air Quality Grants and Expenditures, 1988-1993

	Federal Grant Award	Funds Expended	State Funds
1988	$ 743,203	$ 710,028	$344,047
1989	654,266	604,077	344,047
1990	762,165	680,667	344,047
1991	1,001,441	972,623	344,047
1992	1,092,816	1,092,816	539,509*
1993**	1,261,045	1,260,380	477,836*

*Includes general funds and fees. **Interim figures; not final.

Table 8. Hazardous Waste Program Position Summary.

Position	Time in Posit.	Time in Bureau
Section Supervisor	19 years	19 years
Program Manager	3.6 years	7.4 years
Attorney	8 months	1.8 years
Data Technician	3.9 years	3.9 years
Program Assistant	2.7 years	2.7 years
Administrative Aide	8 months	8 months
Environmental Specialist 4-P	7 months	2.7 years
Environmental Engineer-P	2.4 yrs	2.4 yrs
Environmental Specialist 3-H	8 months	8 months
Environmental Specialist 3-P	Vacant since June 1993	
Environmental Specialist 3-P	7 months	1.7 years
Environmental Specialist 4-R	17.7 years	17.7 years
Environmental Specialist 3-R	3.6 years	3.6 years
Environmental Specialist 3-R	Vacant since Feb 1993	
Environmental Specialist 3-R	7 months	1.2 years
Environmental Specialist	Authorized to be filled July 1993	
Environmental Specialist	but positions remain unclassified	

Code: P=Permitting R=Regulatory H=Hydrologist

Of the 16.97 positions authorized, ten are either vacant or the occupant has been in the position less than one year (59%). The staff have a combined 56.68 years experience in their present positions, for an average of 4.36 years experience per present position. However, if the two people with the greatest longevity (36.7 years combined experience) are dropped from the analysis, the remaining 11 staff members have an average of 1.8 years experience in their present position.

Table 9 presents data on hazardous waste program staff turnover and retention. These data illustrate that staffing of the supervisory positions (section supervisor, program manager, lead regulatory position) has been fairly stable over the last six years. However, there is routine turnover among the environmental specialist positions within both the regulatory and permitting programs. It is particularly noteworthy that the lead permitting position has been filled by five different people over a period of 6 years and 3 months.

b. Air Quality Division

Staffing of the the AQD has increased significantly since 1988 and is authorized at 41.03 full-time equivalent (FTE) positions in FY94. The 1993 Legislature authorized 10 new positions for FY94 and 5.0 additional positions in FY95. The expansion of the division is primarily to meet requirements of the FCAA and it has been funded entirely with increased federal funding and fees. **Table 10** summarizes the Air Quality Division's positions and the length of time each has been filled.

The AQD has experienced problems in recruiting qualified applicants for upper level air quality positions. The division placed an ad in a number of environmental journals stating that positions in the AQD would be opening soon and asking interested persons to submit resumes. A large number of people submitted their resumes; however, when the responsibilities of the positions and the salary were discussed with potential applicants, the well qualified people declined to be considered for the job because the pay was so low. Therefore, the AQD is generally forced to fill positions with people who need training in the air quality field. Once these people are trained, however, they can command a higher salary elsewhere. The AQD has two

Table 9. Turnover and Retention in the Hazardous Waste Program

Position	Dates	# Occupants	Months Vacant
Section Supervisor	1974-93	1	0
Program Manager	1990-93	1	0
Attorney	1990-93	3	7
Data Technician	1989-93	1	0
Env. Specialist 4-P	1987-93	5	6
Env. Engineer-P	1988-93	3	10
Env. Specialist 3-H	1987-93	4	24
Env. Specialist 3-P	1990-93	2	2
Env. Specialist 3-9	1991-93	2	0
Env. Specialist 4-R	1976-93	1	0
Env. Specialist 3-R	1987-93	2	6
Env. Specialist 3-R	1987-93	5	24
Env. Specialist 3-R	1987-93	4	6
Env. Specialist	New Position		
Env. Specialist	New Position		

Code: P=Permitting R=Regulatory H=Hydrologist

NOTE: Data not available for the Program Assistant and Administrative Aide positions.

Table 10. Air Quality Division Position Summary

Position/Administration	Time in Position	Time in Bureau
Bureau Chief	6.3 years	6.3
Attorney Spec.	1 month	1 month
Attorney Spec.	4.2 years	4.2 years
Lic/Cert/Pmt. Tech.	2.1 years	2.6 years
Admin. Support	0.3 years	0.3 years
Admin. Support	2 weeks	2 weeks
Admin. Support	9.8 years	11.2 years
Planning & Technical Support		
Program Manager	13.3	16.8
Info. Systems Supv.	vacant since 9/92	----
Air Quality Spec.	4.5	9.8
AQ Elec. Equip. Tech.	13.4	13.4
Air Quality Spec.	1 month	1 month
Air Quality Spec.	vacant since 11/93	----
Info. Systems Spec.	7.4	15.4
Info. Systems Spec.	1 month	1 month
Air Quality Spec.	2.6	2.6
Air Quality Spec.	1.6	1.6
Air Quality Spec.	vacant since 6/92	----
Air Quality Spec.	6 months	6 months
Air Quality Spec.	3.5	10.3
Info. Systems Tech.	1 month	1 month
Air Quality Spec.	1 week	1 week
Air Quality Spec.	2 months	1.5 years
Permitting		
Program Manager	2.1 years	6.8
Air Quality Spec.	1 month	1 month
Env. Engineer Spec.	2 months	1.3 years
Env. Engineer Spec.	1.6 years	3.4 years
Air Quality Spec.	1.7 years	13.5 years
Env. Engineer Spec.	vacant since 8/93	----
Env. Engineer Spec.	3 months	1.5 years
Env. Engineer Spec.	3 months	1.2 years
Admin. Officer	1 month	1 month
Env. Engineer Spec.	12.5 years	13.7 years
Compliance & Enforcement		
Program Manager	vacant since 8/93	----
Env. Engineer Spec.	13.3 years	23.2 years
Air Quality Spec.	7.3 years	13.2 years
Air Quality Spec.	13.3 years	13.3 years
Air Quality Spec.	vacant since 5/92	---
Env. Engineer Spec.	3.4 years	3.4 years
Env. Engineer Spec.	vacant since 11/93	---

experiences where six months after hiring, when the people had become trained and were beginning to work independently, the applicants left for jobs that paid more money. We anticipate this "revolving door" will continue as long as our compensation package remains the same. **Table 11** summarizes the program's turnover and retention rates.

Of the 41 current positions, 33 are filled (80%). The occupants in 13 of the positions have been there less than a year. This means that 53% of the staff positions are either vacant or the person has been performing their current activities for less than a year. The staff have a combined 126 years of experience in their present positions, for an average of 3.15 years experience per position. Excluding the 9 staff members who have been in their current positions for more than 5 years, the existing staff have an average of 1.28 years of experience in their current positions.

3. DHES Analysis

The HWMWG asked program managers from the DHES air quality and hazardous waste programs to explain their perspective on staff recruitment and retention problems. They said the major problem with both recruiting and retaining expert personnel is the lack of competitive pay. A few years ago, the state temporarily dealt with the problem through pay exceptions for both environmental engineers and environmental specialists. However, with the transition to market-based pay, the exceptions disappeared and the pay for these positions is again falling way behind what it is in both other states and private companies. In their opinion, a method needs to be found that allows agencies to operate like a business and compensate employees at going market salaries if funding is available.

Once a person is recruited and agrees to take a position with the department, the inability to reward someone for gaining knowledge and expertise and making a contribution to the program severely hampers the agency's ability to retain experienced personnel. This is especially the case for technical staff or staff involved with permitting activities, because they can make more money with a consulting firm or the regulated community once they have been trained by the department. Periodic salary increases

Table 11. Air Quality Division Turnover and Retention

Position Administration	Dates	# of Occupants	Months Vacant
Bureau Chief	72-93	4	13
Attorney Spec.	89-93	1	4
Attorney Spec.	93-93	1	4
Lic/Cert/Pmt. Tech.	91-93	1	0
Admin. Support	71-93	18	51
Admin. Support	91-93	3	4
Admin. Support	77-93	3	3.5
Planning & Technical Support			
Program Manager	73-93	3	1
Info. Systems Supv.	79-93	3	17
Air Quality Spec.	74-93	5	13
AQ Elec. Equip. Tech.	75-93	3	3
Air Quality Spec.	73-93	5	12
Air Quality Spec.	73-93	8	21
Info. Systems Spec.	78-93	4	14
Info. Systems Spec.	75-93	6	3
Air Quality Spec.	80-93	5	13
Air Quality Spec.	83-92	3	14
Air Quality Spec.	90-93	1	19
Air Quality Spec.	90-93	3	17
Air Quality Spec.	90-93	1	0
Info. Systems Tech.	93-93	1	4
Air Quality Spec.	93-93	1	0
Air Quality Spec.	93-93	1	3
Permitting			
Program Manager	91-93	1	0
Air Quality Spec.	92-93	3	5
Env. Engineer Spec.	92-93	3	2
Env. Engineer Spec.	93-93	0	5
Air Quality Spec.	92-93	1	0
Env. Engineer Spec.	92-93	1	0
Env. Engineer Spec.	93-93	1	2
Env. Engineer Spec.	93-93	1	2
Admin. Officer	93-93	1	4
Env. Engineer Spec.	80-93	3	1
Compliance & Enforcement			
Program Manager	93-93	0	5
Env. Engineer Spec.	71-93	2	2
Air Quality Spec.	75-93	4	10
Air Quality Spec.	73-93	4	10
Air Quality Spec.	71-93	4	28
Env. Engineer Spec.	90-93	1	0
Env. Engineer Spec.	90-93	2	7

or cost of living increases would help to alleviate this problem. Currently, because it is possible to give new employees more starting pay, and existing employees are not able to increase their salaries in existing positions, there are inequities between how new and existing employees are financially regarded. This also leads to retention problems with trained employees.

3. Options Discussed

In response to a request from the HWMWG, Don Vidrine, Hazardous Waste Program, and Jan Sensibaugh, Air Quality Division, developed a list of potential options to address staff recruitment and retention problems. The options they presented for the working group's consideration were:

a. Establish performance based monetary rewards, either pay raises or bonuses. This would provide an incentive for employees to stay longer in the agency and do more.

b Develop a career ladder so that employees can advance within an existing position as they gain more experience and expertise. Presently, the only way to advance is to move into a different position, usually one with supervisory or managerial responsibilities. An administrative and professional career ladder would provide employees an incentive to stay in the agency and progress in their position.

c. Staff programs at a level where personnel feel they can effectively handle the workload and are not constantly in a position of crisis management. This would lead to more job satisfaction and employees would be more likely to stay.

d. Provide educational and training opportunities to employees in exchange for a commitment to remain with the agency for a particular period of time.

e. Expand employee recognition programs. Symbols that show an employee's work is appreciated would help improve agency morale.

f. Offset low pay by providing more vacation time.

4. HWMWG Conclusion

The members of the Hazardous Waste Management Working Group could not agree to any of the options discussed in the previous section. However, the HWMWG did by consensus agree to the following statement:

The Hazardous Waste Management Working Group recognizes that staff recruitment and retention problems exist within the Department of Health and Environmental Science's Air Quality Division and Hazardous Waste Management program.

The members of the HWMWG also agreed to send a letter to the state's congressional delegation requesting their assistance in changing the EPA policy that prohibits the use of state fee revenue to meet the match requirement for the federal grant.

E. Laboratory testing capability.

In order to assess firsthand the status and capability of the Department of Health and Environmental Science's chemistry laboratory, several working group members toured the lab and spoke with its staff. Based upon their tour and subsequent report, the HWMWG concluded that for routine analysis the lab is sufficient. The staff is qualified and does a good job of analyzing the constituents for which the lab is properly equipped to analyze. While the lab does not have in-house capability to analyze such pollutants as dioxins and furans, the lab is able to contract with a private lab for these analyses. A very few labs around the country do these analyses. Some members of the working group expressed concern about the lack of capability within the state to conduct dioxin and furan analysis in the event of a situation requiring a quick response.

F. Hazardous Waste Regulations

While a number of issues related to hazardous waste regulation were discussed by the HWMWG during the course of the study, the only issue specifically discussed under this topic heading was whether or not the state should maintain primacy over the hazardous waste program. The

Environmental Protection Agency (EPA) is ultimately responsible for implementation of the Resource Conservation and Recovery Act Subtitle C (hazardous waste) requirements, but at the state's request, has granted the state of Montana primacy over the program. The state can at any time choose to return primacy over the program to EPA.

The HWMWG discussed but could not reach consensus on a recommendation that the state of Montana should maintain primacy over the RCRA Subtitle C program. The HWMWG then discussed but again could not reach consensus over a recommendation that primacy over the RCRA Subtitle C program should be returned to EPA.

G. Public participation in the permitting process.

1. Current Requirements

The requirements governing public participation in the permitting process for a hazardous waste management facility are contained in Title 16, Chapter 44, Subchapter 9 of the Administrative Rules of Montana. Under these rules, the Department of Health and Environmental Sciences is required to provide public notice whenever a draft permit for a hazardous waste management facility has been completed, a permit application has been tentatively denied, or when a hearing has been scheduled. The public notice is required to contain the name and address of the permit applicant, a brief description of the business to be conducted at the proposed facility, a description of the public comment procedures, and the name, address and telephone number of a person from whom interested persons may obtain additional information. The public notice must be mailed to the permit applicant, other federal, state, and local agencies, and a mailing list of interested persons.

A 45 day public comment period is required whenever the department notices a draft permit. At the time that any final permit is issued, the department must issue a response to the comments raised, specifying which provisions of the permit, if any, have been changed, and describing and responding to all significant comments raised during the comment period.

During the public comment period, any interested person may request a public hearing, if no hearing has already been scheduled. The department is required to hold a hearing whenever it receives written notice of opposition to a draft permit during the 45 day comment period. In addition,

the department has broad discretion to hold a public hearing whenever it finds, on the basis of requests, a significant degree of public interest in a draft permit, or whenever it determines that, for instance, a hearing might clarify one or more issues involved in a permit decision.

The department is also required under the Montana Environmental Policy Act (75-1-101, et seq., MCA) to conduct a public scoping process for an environmental impact statement (EIS), and to hold a public comment period and respond to substantive comments on a draft EIS. These requirements are discretionary for an environmental assessment.

There are additional public participation requirements for a permit application for an incinerator or boiler or industrial furnace proposing to burn hazardous waste. In these instances, before it can issue a permit, the Air Quality Division must publish at least three public notices in the county where the project is proposed, and is required to hold a public hearing on any environmental review conducted pursuant to the Montana Environmental Policy Act.

2. HWMWG Discussion

The HWMWG discussed but could not reach consensus on the following options for changing the public participation requirements:

a. As a prerequisite to a permit application, require the applicant to make public notification and hold a public hearing on the proposed facility.

b. Establish specific goals and objectives for a pre-application public hearing.

c. Require that a public hearing or meeting be held at two points: after an application for a permit is complete and after the department has completed an environmental review document.

H. Adequacy of EPA standards

The members of the HWMWG decided that they had neither the expertise nor time to evaluate the adequacy of Environmental Protection Agency standards for hazardous waste management facilities. However, the HWMWG did

note that, at present, the DHES has very little flexibility in how it can modify regulatory standards for hazardous waste. In order to maintain primacy over hazardous waste, the department is required to adopt standards equivalent to those contained in the federal Resource Conservation and Recovery Act (RCRA). These constitute a minimum standard. At the same time, with a few exceptions, the DHES is prohibited by state law from adopting rules regarding hazardous waste that are more stringent than the federal requirements. Consequently, with a few exceptions, the RCRA requirements also constitute a maximum standard.

I. Law violator provisions.

1. Current Requirements

Law violator provisions include a variety of different requirements aimed at preventing an applicant from receiving a new permit while in violation of another permit or environmental law, preventing repeat violators from receiving a permit altogether, or allowing an agency to place more stringent permit conditions on law violators. The Montana Hazardous Waste and Underground Storage Tank Act currently contains no such provisions.

The Clean Air Act of Montana does, however, contain provisions that may be classified as law violator provisions. An applicant for an air quality permit for a boiler or industrial furnace or a hazardous waste incinerator is required to submit a disclosure statement that describes: 1) any civil or administrative complaint filed against the applicant in the last five years for violation of Montana air, water, solid or hazardous waste, or underground storage tank laws; and 2) any criminal judgements entered against the applicant in the last five years for a violation of either a Montana environmental law or an environmental law of another state (see 75-2-232, MCA).

Based upon the information in the disclosure statement, the department at its discretion may deny or condition an application for an air quality permit if the applicant has a history of repeated violation of environmental laws, has been assessed a civil or administrative penalty for violation of an environmental law, or has been convicted of criminal violation of an environmental law. In making the decision to deny or condition a permit, the department is required to take into account the nature and gravity of the previous violation or violations, the degree of culpability of the applicant, and the

applicant's degree of cooperation with state and federal agencies involved in the complaints or convictions (see 75-2-233, MCA).

2. HWMWG Discussion and Recommendation

The members of the HWMWG discussed law violator provisions and agreed by consensus to the following statement:

A company's clearly defined pattern of compliance or noncompliance should be a factor considered in the decision to issue a permit for a hazardous waste management facility.

Chapter 3: Conditionally Exempt Small Quantity Generators

ISSUE: **Can the state better manage or regulate conditionally exempt small quantities of hazardous waste?**

This chapter is divided into three sections. Section I provides an introduction to and background information on the issue. Section II summarizes the presentations that were made to the Hazardous Waste Management Working Group by various people involved in managing conditionally exempt quantities of hazardous waste. Section III presents the options and recommendations developed by the working group.

I. Introduction and Background

What is a conditionally exempt small quantity generator (CESQG)?

A conditionally exempt small quantity generator of hazardous waste (CESQG) is a generator who generates no more than 100 kilograms (220 lbs) of hazardous waste in a calendar month (16.44.401(4)(c), ARM). The waste streams from many types of small businesses (for example, dry cleaners, car repair and auto body shops, print shops, and wood treatment facilities) commonly contain small amounts of hazardous waste such as solvents, oils and lubricants, or pesticides. As with household hazardous waste, small quantities of hazardous waste contributed by numerous CESQGs become significant in aggregate. Improper disposal may lead to soil contamination, surface and ground water contamination, and more toxic air emissions.

How much hazardous waste do CESQGs in Montana generate?

It is difficult to estimate the amount of hazardous waste generated by conditionally exempt generators. A 1987 survey conducted for the Department of Health and Environmental Sciences estimated that CESQG waste comprises about 2% of the state's hazardous waste stream. Other studies across the country have found that CESQG waste makes up anywhere from .4% to 14% of the hazardous waste stream. Generally, because of the difficulty of identifying and counting CESQGs, estimates of CESQG waste generation rates are imprecise. However, based upon the data available for Montana and similar information from

other states, CESQGs appear to generate a small percentage of the total waste stream relative to other classes of generators.

Under federal and Montana requirements, conditionally exempt generators are subject to fewer regulatory requirements than are larger generators. The underlying assumption made by the regulatory framework is that risk is associated with volume. Therefore, on the whole, a generator that generates a large amount of hazardous waste poses a greater risk to human health and the environment than one that generates less waste. Consequently, conditionally exempt generators are not required to register as generators, may transport waste without a manifest, and may mix hazardous waste with solid waste. Perhaps most significantly, CESQGs can dispose of hazardous waste in a municipal solid waste landfill and, in some instances, a public wastewater treatment system; these options are not allowed for small and large quantity generators who must dispose of their waste at a licensed hazardous waste facility.

Some states have adopted programs specifically aimed at conditionally exempt generators. In some instances, these involve applying to CESQGs all or some of the regulations that apply to large and small quantity generators. In other instances, the focus is information or education programs, or research to more accurately determine the population of CESQGs and their management practices.

The issue considered by the Hazardous Waste Management Working Group (HWMWG) was whether the state should have any additional programs -- regulation, research, or education -- for CESQGs.

II. Presentations

In order to gain a better understanding of how CESQG waste is currently managed and the obstacles and opportunities faced by conditionally exempt generators, the HWMWG invited several generators, a local government official, and representatives of a waste disposal company to make presentations to the group. The following section summarizes those presentations, which were made over the course of several meetings.

A. Dave Nation, Special Resource Management

Dave Nation, General Manager for Special Resource Management (SRM) in Rocker, MT, a company that provides hazardous waste collection and disposal services, gave a presentation to the HWMWG on his company's perspective on CESQG waste and the services that SRM provides in Montana.

Mr. Nation said that there is a functioning network with a wide variety of services available to CESQGs in Montana. SRM has been in Montana for eight years and has as customers all sizes of generators - from large quantity generators to households.

Based upon his experience in the hazardous waste industry, Mr. Nation said that CESQGs generate a very small amount of the total volume of hazardous waste in Montana as well as across the nation.

Mr. Nation noted that hazardous waste regulations associate risk with volume. The underlying assumption made by the regulatory framework is that on the whole, a facility that generates a large amount of waste poses a greater risk to human health and the environment than one that generates less waste.

Mr. Nation described the four legal disposal options for conditionally exempt quantities of hazardous waste:

1. Recycle;
2. Disposal at a Subtitle D municipal solid waste landfill (requires the landfill's approval);
3. Disposal at a Subtitle C hazardous waste facility (landfill, fuels blending, or incineration); or
4. Discharge into a publicly-owned treatment works (POTW or water treatment plant), although this also requires the POTW's approval.

He noted that disposal at a Subtitle D facility is becoming less and less of an option. State law prohibits the disposal of some types of waste in a municipal solid waste landfill (e.g., liquids) and landfills are not willing to accept other types of waste due to concern over liability. Also, landfills that will accept hazardous waste may require analytical work to profile the waste, thereby increasing cost.

Mr. Nation then discussed the option of disposing of waste in a Subtitle C facility. He noted that some small quantity generators think they can call SRM on Monday and have their waste picked up by Friday. This is not the case. There are several steps that must be completed before the waste can be picked-up.

Step 1: Profiling. Before a company like SRM will pick-up a waste, and thus assume liability for it, the company must know what kind of waste it is accepting. This process is referred to as "profiling." Profiling involves taking a sample of the waste and sending it to a chemical lab for analysis. This process may take several weeks and cost up to $1000.

In the case of a repeat customer with the same type of waste produced through the same process, the profiling process may take only three days and cost significantly less.

Step 2: Processing. Once the waste is profiled, SRM must determine whether the receiving treatment, storage or disposal (TSD) facility can handle that particular type of waste. Is the facility licensed to receive that type of waste? Is the waste a type the TSD can manage? Not all facilities can handle all types of waste. SRM must be certain the TSD will accept the waste before picking it up and shipping it.

Step 3: Pick-up. Once steps 1 and 2 are complete, SRM can then schedule a pick-up. In the case Mr. Nation said that SRM makes at least one run somewhere around the state each week.

Mr. Nation noted that the cost of profiling and disposal varies depending upon the type of receiving facility. In the case of an incinerator, the profiling cost is around $1000; and the cost of disposal between $700 and $1000 per 55 gallon drum. The profiling fee for either a landfill or fuel blending is cheaper, about $400-$500. The cost of disposal at a fuel blending facility runs between $150 and $190 per drum, compared to $100 per drum at a landfill.

B. Ray Rogers, Special Resource Management

How can CESQGs improve their waste management practices?

Ray Rogers discussed six ways that CESQGs can improve waste management:

1) Dispose of waste at household hazardous waste collection events or facilities (in some cases a fee may be charged);

2) Reduce profiling costs by profiling waste from multiple facility locations under one profile (provided that the waste stream is the same);

3) Avoid mixing wastes -- segregate different wastes into different drums. This practice may decrease costs by allowing for disposal at the cheapest disposal option (e.g., landfill vs. incinerator);

4) Keep an inventory of drum contents. This practice may reduce profiling costs;

5) Keep Material Safety Data Sheets readily available that describe the contents of a drum; and

6) ASK FIRST. Call a waste management consultant if you have any questions.

In response to a question, Mr. Rogers also noted several of the most common waste management mistakes made by CESQGs. These included mixing hazardous waste with non-hazardous waste; failure to keep good data on what goes into a drum; mixing incompatible wastes; and container management (keeping waste in containers that are in poor condition or that leak).

Another question was asked about why the cost of disposal was so high. Dave Nation noted two reasons. First, a portion of the cost is attributable to the need for liability assurance. A hazardous waste company needs to have adequate financial capability to manage waste over the long-run -- these costs are built into the price of disposal for each barrel. Second, hazardous waste management is a complex business, requiring a great deal of technical expertise and knowledge about regulations. There is an expense associated with having the right kind of people with the right expertise and knowledge on staff.

What problems has CESQG waste created in Missoula City-County?

C. Allan English, Missoula City-County Health Department

Allan English works for the Missoula City-County Health Department, primarily on water quality issues. He discussed some of the problems that have arisen in Missoula as a result of CESQGs. In particular, he noted a Missoula dry cleaner disposed of perchloroethylene by dumping it on the ground and down the sink into the sewer

system. According to Mr. English, due to loopholes in the regulations, these practices are not illegal.

Mr. English noted another incident where an individual went around Missoula and Ravalli Counties collecting paint thinner and other hazardous waste from various CESQGs and possibly small quantity generators. The individual accumulated six 55 gallon barrels of waste that were unlabeled. Consequently, there was no way to determine what it was and from where it originated. The County ended up disposing of it at a cost of $4000. Again, according to Mr. English, this individual did nothing that was illegal.

Mr. English said that in Missoula County the problems created by CESQG waste are fairly large. While he did not know what percentage of the hazardous waste stream was CESQG waste (probably a small percentage, however), he noted that it does not take very much hazardous waste in an aquifer to create a water quality problem. He speculated that most CESQG waste ends up in the solid waste stream and that very little goes to a licensed hazardous waste treatment, storage and disposal facility (TSD).

There are many similarities between CESQGs and household generators of hazardous waste. Neither are very familiar with the regulations. Both claim it is a financial burden to dispose of hazardous waste properly.

Subsequently local government officials are put in a tough position: disposing of hazardous waste by pouring it down the sink drain is an easy but unacceptable disposal method, yet it is not practical to expect CESQGs to register with the Environmental Protection Agency (EPA) as a generator and to comply with manifest and testing requirements. There is no practical alternative. Mr. English said he would like to see CESQG collection programs as well as household hazardous waste collection programs.

At the local level, Missoula City-County has several programs that address CESQG waste. First, there is a comprehensive inspection program to determine which regulations apply to a given facility. Second, the City-County tries to educate people about the Halogenated Solvent Act and to get generators to register with the state. Third, Missoula County has established a water quality district and passed an aquifer protection ordinance. Finally, in

conjunction with EPA, the City-County has established an underground injection control demonstration project that has identified and closed over 250 injection wells.

Mr. English said he is uncertain whether permitting or placing reporting requirements on CESQGs is a good idea. At a minimum, however, it might be appropriate to require CESQGs to keep a record of the waste they generate and how they dispose of it. Any record keeping requirement for CESQGs should be simpler than what is required for small quantity generators (SQGs). Recordkeeping requirements would help officials to determine the scope of the problem.

Also, Mr. English suggested that maybe there should be a distinction made between those CESQGs who use halogenated solvents and those who do not. Maybe people who use more than a couple of gallons of halogenated solvents should be SQGs rather than CESQGs.

Mr. English identified the following roadblocks to a CESQG pick-up program: the need for an EPA identification number; the cost; liability; and, the need and cost associated with testing the waste.

From a county perspective, there are three options for disposing of hazardous waste: 1) Put it in a landfill; 2) Dispose of it improperly; or 3) Pay to have it properly disposed of.

D. Charlie Culver, Culver's Foreign Car Service, Missoula

How do dry cleaners and auto repair shops manage their hazardous waste?

Charlie Culver owns a small foreign car service in Missoula. He presented the perspective of a CESQG trying to determine the most responsible and cost-effective method for managing the hazardous waste.

Mr. Culver said that his business produces six types of waste:

1) Dirty soapy water from the parts washer. He uses a bath of 55 gallons of water and a biodegradable soap to clean oily parts. When the bath is changed, about once per month, he dumps the water down the floor drain into the sewer system. What is left then is about a dustpan full of sludge composed of carbon, lead, and residue oil.

2) Cleaning solvent. Mr. Culver said his use of cleaning solvents has dropped dramatically since he purchased the parts washer. He used to generate about 55

gallons/year of waste solvents; this is down to about 20 gallons. He disposes of solvents by mixing them with waste oil.

3) Anti-freeze. Mr. Culver pays a recycler 50 cents per gallon to pick-up and dispose of the approximately 150 gallons of anti-freeze he collects each year.

4) Brake fluid. About 3 gallons of brake fluid is disposed of in the sewer system each year.

5) Waste oil. Mr. Culver collects 250 gallons per year of waste oil. In the past, he has given the oil to a business that has burned it in a waste oil heater. However, EPA recently shut down the waste oil heater. Consequently, he now pays $37 a trip to a waste oil collector to pick-up and dispose of up to 150 gallons of oil.

6) Oil filters. Oil filters contain waste oil and products of combustion. For $50, a waste oil collector will dispose of a barrel full of filters.

To date, Mr. Culver said he takes the perspective that hazardous waste disposal presents opportunities rather than creates problems. However, he is concerned about potential liability issues.

With regard to the regulatory framework, Mr. Culver said that regulations and requirements are difficult for the lay person to understand. For instance, he noted that regulations often use a substance's scientific name rather than its common name, making it difficult for someone to determine whether they even use the substance. He suggested that regulations be written in a user-friendly manner and that they use trade names rather than chemical names. He said regulations must be understandable if a person is to comply with them. He also said that it is his perception that the regulatory framework has a number of loopholes in it and is not applied consistently.

Mr. Culver suggested several roles the state could play. First, while underground injection is addressed fairly well by EPA, there needs to be more local follow-up. These regulations need to be more evenly enforced. Second, any expenditure a small business makes to comply with hazardous waste requirements is relatively large.

Small businesses need incentives to comply; possibly things like tax breaks or public appreciation for being a "good actor." Also, maybe information on waste management options could be attached to business licenses.

E. Dave Rickel, Valley Motor Supply, Billings

Valley Motor Supply has nine shops in Montana that produce hazardous waste. Most of the waste produced is derived from engine overhauls and rebuilds. All of the shops are CESQGs. Historically, these shops had floor sumps. However, in recent years all of those floor sumps have been cemented shut.

Traditionally, engine parts were cleaned by soaking them in hot tanks. Presently, however, engine parts are cleaned in a high-pressure parts washer. Filter machines are used to clean the washing solution in the parts washer, which can then be used repeatedly. The sludge that comes out of the filter machines is placed in a barrel, and when the barrel is full, it is collected, tested, and processed by Laidlaw Environmental Services. The final disposal site is located in Tennessee. The cost for these services is expensive -- $400 per barrel. On average, each shop is generating 1-1.5 barrels of waste per year.

In general, Mr. Rickel said that he thought the regulations for CESQGs were adequate. However, how they are interpreted and implemented is variable and still a problem.

F. Steve Turkiewicz, Montana Auto Dealer's Assoc., Helena

Mr. Turkiewicz said that most auto dealers are willing to work with the state and the public on hazardous waste management on a good faith-good will basis. However, they are concerned about heavy-handed enforcement. To date, there has not been an adversarial relationship between regulators and auto dealers, and auto dealers want to keep it that way.

Mr. Turkiewicz said that most auto dealers are CESQGs of hazardous waste. In terms of managing hazardous waste, he said dealers commonly are involved in storage, treatment and recycling. Waste oil is a major component of the waste stream, and is often burned in waste oil burners. Absorbent material from floors usually goes to the landfill.

Mr. Turkiewicz said the dealers he surveyed cumulatively have spent $20,000 on recycling equipment over the last 5 years. This comes to an approximate cost of 5-20 cents per gallon recycled. The Auto Dealer's

Association is working closely with MSU Extension Service on pollution prevention and education.

Liability is an issue that scares the members of the Montana Auto Dealer's Association. They have concerns about dealing with EPA and being a potentially responsible party for a superfund site.

Mr. Turkiewicz expressed a concern about a dichotomy in the regulatory framework. On one hand the DHES is the regulatory agency, and on the other it is supposed to provide technical assistance. The regulated community would like technical assistance that is non-threatening; they want the help but do not want to expose themselves to potential enforcement actions.

Mr. Turkiewicz suggested that the state should continue working in a constructive fashion, and to provide technical assistance and education. He also noted that the market system is what drives hazardous waste disposal options. All auto dealers want to do the right thing, but some don't know how to do it.

G. Doug Porter, Persnickety Dry Cleaners, Bozeman

Mr. Porter started out with the caveat that his comments and thoughts are probably not reflective of the position of many of the other dry cleaners in the state.

Mr. Porter said that about 20% of the dry cleaners in the state use hazardous waste haulers to dispose of their waste. Another 20% claim to be CESQGs, but actually are small quantity generators. According to Mr. Porter, too many people in the industry lie about how much they generate and then dispose of the waste in landfills. Personally, he said that he believed dry cleaners that use chlorinated solvents should not be regulated as CESQGs but as small quantity generators.

Mr. Porter said the 600 lbs of hazardous waste he generates annually in his Bozeman store is picked-up and disposed of by a hazardous waste hauler at a cost of about $1500 per year. This translates to about .4% of annual revenues. His plants have modern equipment, although 12-13 dry cleaners in Montana are still operating with 1950's technology. The cost of properly disposing of hazardous waste may run as high as 3-3.5% of revenues for some dry cleaners.

Mr. Porter said that while liability is a major issue, it is primarily a federal issue and he is not sure anything can be done about it at the state level.

He suggested the following steps for the state: 1) Make dry cleaners small quantity generators rather than CESQG's; 2) DHES should ask more questions about what kinds of waste dry cleaners produce and how they manage and dispose of it; and 3) Place a $5/gallon tax on solvents, to be spent on identification and remediation of problems, and education.

H. Dick Garrett, Montana Textile Association

Dick Garrett, President of the Montana Textile Association, along with several other Association members, shared their perspective on the linen supply-laundry-dry cleaning industry and on the opportunities and obstacles to hazardous waste management by CESQGs. Mr. Garrett stated in part that the Association would like the state to: help provide access to licensed waste haulers in all areas of the State of Montana; continue its efforts to provide information and education to dry cleaners and other CESQGs; and recognize that placing additional regulation and reporting requirements on CESQGs will not solve the state's pollution problems.

I. Jeff Essman, One Hour Valet Dry Cleaners, Billings, MT

Mr. Jeff Essman, a dry cleaner from Billings who was representing himself, discussed federal proposals to establish a national tax and trust fund to assist the dry cleaning industry in the remediation and clean-up of contaminated sites. Mr. Essman also noted that the federal proposals would eliminate the conditionally exempt small quantity generator status for dry cleaners.

Mr. Essman mentioned that proper hazardous waste transportation and handling services were not available in rural areas. He noted that there were several barriers to providing this type of service in Montana. Barriers such as distance, market penetration, and a lack of a temporary collection facility are hampering efforts to bring service to rural areas. He said that the state could play a constructive role in identifying service markets and supporting a hazardous waste collection site facility.

J. Mike Vogel, MSU Extension Service

Mike Vogel, Director of the Solid Waste and Pollution Prevention Programs at the Montana State University Extension Service, discussed the Extension Service's mission, philosophy on education, and programs. Mr. Vogel said that Extension Service has a land grant mission that focuses upon educating all Montanans. Its goal is to take research, information, and knowledge developed in the university system and provide it to the people of the state. The program is federally supported, and the Montana Extension Service has 49 offices in 53 Counties and four Reservations.

The Extension Service, depending on the particular program, targets audiences ranging from farmers and ranchers to small businesses, teachers and students, and local governments. A variety of teaching methods are used, including presentations and training seminars on-site and over MetNet, publications, audio-visual material, youth and teacher curricula programs, demonstration projects, and self-study modules.

K. Karen Sanchez, MSU Extension Service

How can the MSU Extension Service's Pollution Prevention program assist CESQGs?

Karen Sanchez, Program Coordinator for the MSU Extension Service, described the Pollution Prevention Program. She said the purpose of the program is to provide confidential, non-regulatory pollution prevention information and technical assistance to Montana's small businesses. Pollution prevention means reducing hazardous substances, pollutants, or other contaminants in the waste stream before recycling, treatment, or disposal. She noted that there is profit in pollution prevention; by reducing their waste stream, many businesses decrease waste management and disposal costs and reduce regulatory oversight and long-term liability while increasing worker safety and business efficiency.

Ms. Sanchez said the current target audience for the program is businesses involved in automotive and vehicle maintenance, dry cleaning, auto body repair, printing, and motels and hotels. The program uses several different educational tools, including workshops
that have been attended by over 350 people to date, educational materials and publications, video tapes, and demonstration projects in businesses. The program has also established a library from which information may be borrowed.

Ms. Sanchez said the Montana Pollution Prevention Program is funded by a three year grant scheduled to expire in October, 1995. The program receives no state financial support. Currently, the program is staffed by one person.

III. Options And Recommendations

Based upon the presentations and other information collected, the Hazardous Waste Management Working Group (HWMWG) considered several options for how the state might further address conditionally exempt small quantity generators. Each of these options and its final disposition is discussed below. Options recommended by the HWMWG are presented in subsection A while the options that were considered but rejected are presented in subsection B.

A. Options Recommended by HWMWG

1. Secure funding for the MSU Extension Service's Pollution Prevention Program.

The Montana State University Extension Service's Pollution Prevention program is funded through a grant from the federal Environmental Protection agency that expires in October, 1995. This is the primary program in the state for educating CESQGs about methods for managing and reducing the hazardous waste stream. Based upon a review of the program and testimony from industry representatives who have participated in the program's pollution prevention training seminars, the Hazardous Waste Management Working Group concluded that:

> **The MSU Extension Service's pollution prevention program provides a valuable -- and possibly essential -- service to Montana and to small businesses in the state, and the state should take action to continue the program's funding beyond the life of the current EPA grant.**

In order to maintain current program and staffing levels beyond the lifetime of the current grant, the following annual funding is necessary:

1 FTE Program Coordinator	42,500
0.5 FTE Secretary	10,625
Program materials	6,500
TOTAL	**$59,625**

a. Funding Options

The Hazardous Waste Management Working Group considered several strategies for funding the pollution prevention program. As a part of its evaluation, the HWMWG reviewed funding approaches used for other pollution prevention programs around the country. The funding strategies considered are outlined and discussed in the subsections below.

The HWMWG's recommended funding option was the combination approach described in option vi. The HWMWG recommended that the EQC consider sponsoring a proposal to fund the MSU Extension Service's pollution prevention program through 50% general funding with the additional amount of necessary funding for the program provided by the MSU Extension Service through grants or other means.

i. General Fund Appropriation

While the CESQGs directly benefit from the MSU Extension Service's Pollution Prevention program, the citizens of Montana also derive benefit from the program whenever pollution to public air and water resources is prevented or diminished as a result of knowledge learned through the program. Since the purpose of the state general fund is to fund programs of general benefit to the state, the general fund would be an appropriate funding mechanism for the pollution prevention program. The HWMWG felt the program could stand on its merits, and that with broad-based support from CESQGs the legislature might look favorably on such a funding request.

ii. Registration Fees

Because CESQGs directly benefit from the Pollution Prevention program, it seems appropriate that they bear the cost of supporting the program. Under this option, the Pollution Prevention program would become self-supporting by charging fees for the services it provides.

Assuming the program were to train 350 people per year, registration fees would have to be approximately $175 per individual to fund the entire $59,000 annual budget. For a one-day seminar, this cost seemed prohibitively expensive

to the members of the working group. Many believed the Extension Service would see reduced participation as a result of such a registration fee. As a result, the Hazardous Waste Management Working Group rejected this option.

iii. Hazardous Waste Generator Fee

Another option considered was a fee on generators of hazardous waste. However, because each of these various proposals suffered a major defect, the HWMWG rejected this option. Fees placed on large or small quantity generators (a tonnage fee on waste generation, a fee on manifests, etc.) were deemed inequitable because the program does not directly benefit those classes of generators. On the other hand, any fee placed generally on conditionally exempt small quantity generators would be difficult and expensive to administer, and would suffer from the same deficiencies as the proposal discussed earlier to extend reporting requirements to CESQGs (see section III.A above).

iv. Hazardous Waste Product Tax

Some pesticide recycling programs have been funded through a tax paid by the consumer on the retail purchase of pesticides. A similar approach could be used to fund the Pollution Prevention program by placing a tax on products that contain hazardous substances. This approach has the advantage of being broad-based, but the HWMWG was concerned that the cost of administering such a program and the amount of revenue it might generate were not appropriate for funding a $60,000 program. This option also was rejected.

v. Additional Grants

While the current EPA grant is scheduled to expire in October, 1995, there may be opportunities for grant funding from other sources. The disadvantage of this approach is uncertainty of the funding and the tenuous nature of soft-money support for the program.

vi. Combination General Fund and Other Funding

This approach, the one preferred by the members of the HWMWG, involves a combination of funding options i, ii, and v.

The working group believes that because the citizens of the state benefit from the Pollution Prevention program, half of the funding should be state general fund. The remainder of the necessary funding should be raised by the Extension Service from grant funding, registration fees, or other means.

2. Broaden the existing tax credit for purchase of recycling equipment to also include equipment that results in the reuse or reduction of hazardous waste.

The existing tax code provides a tax credit for investment in property used to collect or process reclaimable material and a tax deduction for the purchase of recycled materials (Title 15, chapter 32, part 6). The scope of these provisions is limited to solid waste. Enacted in 1991, the purpose of this tax credit and deduction is to provide businesses with an incentive to recycle waste and to help create markets for recycled material. The statute sunsets on December 31, 1995.

Another barrier to proper management of hazardous waste by CESQGs is expense. In exploring this option, the Hazardous Waste Management Working Group considered whether the existing tax credit and deduction could be expanded to: 1) include hazardous as well as solid waste; and 2) apply to the capital purchase of equipment that reduces or minimize the hazardous waste stream.

As a part of the assessment of the feasibility of these options, the HWMWG met with Department of Revenue staff to discuss how the current tax credit/deduction provisions contained in 15-32-601, MCA are implemented and any problems that have arisen as a result. Lynn Chenoweth and Steve Austin, Department of Revenue, reported that decisions about whether a tax credit or deduction qualified under the statute were presently made on a case-by-case basis. However, because of their lack of expertise in the area of recycling, it is difficult for them to make these determinations. This lead to the working group making the following recommendation:

The Waste Management Division of the Department of Health and Environmental Sciences should provide technical assistance to the Department of Revenue in writing rules to implement Title 15, chapter 32, part 6 and in making case-by-case determinations about whether a claim qualifies for a credit or deduction.

The HWMWG also considered several possible amendments to 15-32-602, MCA to expand the existing tax credit for recycling equipment to include equipment that reduces the amount of waste generated. While the entire working group was supportive of this proposal in concept, the group could not resolve several critical details. First, there was uncertainty about the affects of amending the statute. For example, no one was certain what processes and businesses would be eligible for a tax credit. Second, the HWMWG had a difficult time defining the term "reduce." How much of a decrease in waste generation qualifies as a reduction for the purposes of the statute? A gram or a ton?

The HWMWG considered another approach whereby each of the types of equipment or processes that qualify for the tax credit would be listed in statute or rule. However, this approach also was unworkable. First, the working group could not identify all of the types of equipment or process that should be eligible for the tax credit. Second, the working group felt that listing the equipment and processes that qualify for the credit would create a disincentive for technology development.

As a fall-back position to amending Title 15, chapter 32, part 6 to apply to the capital purchase of equipment that reduces or minimizes the hazardous waste stream, the HWMWG decided upon the following recommendations:

The sunset on Title 15, chapter 32, part 6 should be extended for another two years, until December 31, 1997; and

The Legislature should study how to expand the tax credits and deductions provided for in Title 15, chapter 32, part 6 to include incentives for the purchase of equipment to reduce or reuse hazardous waste.

B. Options Considered but Rejected by HWMWG

1. Extend reporting requirements to CESQGs

As discussed earlier, unlike small and large quantity generators, conditionally exempt generators are not required to report annually to the state the amount of hazardous waste they generate. As a result, there is little data from which to estimate how much waste is generated by CESQGs and how it is managed. This option would extend the existing reporting requirements for large and small quantity generators to conditionally exempt generators, which would provide the state with the data necessary to make a determination about whether additional regulations are necessary to insure the proper management of hazardous waste by CESQGs.

This option was rejected by the Hazardous Waste Management Working Group. The tasks that would be involved with implementing this recommendation are daunting. There are thousands of small businesses in the state that potentially could qualify as conditionally exempt generators, and given the ephemeral nature of small business, this population is constantly changing. The members of the HWMWG felt it would be extremely difficult, time intensive, and expensive for the Department of Health and Environmental Sciences to identify, collect, and process annual reports from CESQGs. Given the expected loss of some federal funding for the hazardous waste program, funding needed to maintain current program levels, the members of the working group could not justify placing additional responsibilities on the hazardous waste program.

2. Provide state assistance with the aggregation of hazardous waste.

As a guiding principle, members of the HWMWG believe CESQGs needed more alternatives for properly managing hazardous waste. The working group felt that given an economical option to properly manage their hazardous waste, the average person would take the opportunity. One way to provide CESQGs with another opportunity is to hold collection events. Conducted in Montana in Missoula, Bozeman, and Kalispell to date, a collection event works as follows: A local government contracts with a licensed hazardous waste transporter to come to town for a day to collect, test, and package hazardous waste dropped-off by the public, and then to transport it to a licensed hazardous waste management facility.

Some events require users to pay a fee to defray costs; others do not. Some communities in other states have regularly scheduled collection events; other communities hold them occasionally.

Several people testifying before the Hazardous Waste Management Working Group identified potential liability as a major barrier to local government hazardous waste collection programs. There was particular concern that a local government, by collecting and aggregating hazardous waste, would gain status as a generator and thus assume full or partial liability for any accident that occurred during transportation or contamination that resulted from later disposal or management actions. In order to remove this barrier, the HWMWG considered the option of statutorily limiting a local government's liability to the collection and aggregation of hazardous waste.

Staff research on this issue revealed the following:

- A multi-state survey identified no other state that has limited a local government's liability for hazardous waste collection programs;

- The Superfund reauthorization currently before Congress may under some conditions release generators from the liability associated with contamination at a disposal site; and

- Limiting liability may conflict with federal requirements under RCRA or CERCLA.

Officials in other states suggested that the best way to limit liability is to handle and dispose of waste properly. They argued that while liability cannot be eliminated, it can be minimized through proper management, or that risk of liability can be pooled across multiple local governments (insurance concept). Also, a contract between a local government and a transporter can be used to minimize the risk of liability to local government.

After considering this information, the working group concluded that liability cannot be eliminated and the state should take no action to attempt to limit a local government's liability for hazardous waste collection programs. No other options were considered for state assistance with the aggregation of hazardous waste.

3. Prohibit the disposal of CESQG waste in municipal landfills.

As discussed earlier, the existing federal and state regulatory framework allows CESQGs to dispose of hazardous waste in a municipal solid waste landfill. Under this option, that practice would have been prohibited through a statutory change.

This option was rejected because municipal solid waste landfills already have the discretion to refuse to accept hazardous waste from conditionally exempt generators, and the HWMWG believes an increasing number of landfills are choosing to exercise that discretion.

Chapter Four: Siting

ISSUE: **Analyze siting criteria for hazardous waste management facilities.**

I. Introduction

The siting of hazardous waste management facilities has emerged as one of the most contentious and controversial environmental issues of the decade, both nationally and in Montana. On one hand, proponents of new hazardous waste management facilities note that such facilities offer safer and more modern technology, and a less expensive disposal option for hazardous waste. On the other hand, opponents express concern about uncertain risks to human health and the environment and the inequitable distribution of costs, such as decreased property values, that may be imposed upon the host community. How to develop a siting process that incorporates technically correct site selection criteria with an open and public decision-making process that instills public confidence challenges the limits of public policy.

What are the current siting requirements in Montana?

A. Current Siting Requirements for Montana

Under the federal Resource Conservation and Recovery Act (RCRA), four siting criteria must be met as a part of the process to permit a hazardous waste management facility. These four federal requirements constitute Montana's current siting requirements. These requirements are as follows:

> (1) Seismic considerations. Portions of new facilities where treatment, storage, or disposal of hazardous waste will be conducted must not be located within 200 feet of a fault which has had displacement in Holocene time.
>
> (2) Floodplains. A facility located in a 100-year flood plain must be designed, constructed, operated, and maintained to prevent washout of any hazardous waste by a 100-year flood (note: there is a variance to this requirement).
>
> (3) Ignitable or reactive material. Containers holding ignitable or reactive waste

must be located at least 50 feet from the facility's property line.

(4) Salt domes. A facility may not be located in a salt dome formation, salt bed formation, or in an underground mine or cave.

When an applicant applies to the Department of Health and Environmental Sciences (DHES) for a permit to operate a hazardous waste management facility, the applicant specifies the location of the proposed facility. A determination of compliance with the federal siting requirements is then made by the department as a part of its permit review.

Under its permitting statutes, the department does not have authority to require an applicant to site a facility in one location versus another. However, under the alternatives analysis required by the Montana Environmental Policy Act (MEPA), the department may evaluate the relative impacts of the proposed site versus impacts of other sites.

Presently in Montana, five facilities have operating permits for a hazardous waste management facility (Malmstrom Air Force Base, Montana State University, Conoco Refinery, Exxon Refinery, and Special Resource Management), and one facility has submitted an application (Ash Grove Cement). In addition, six facilities that have closed are permitted for post-closure care.

II. Discussion of Siting Issues by HWMWG

The Hazardous Waste Management Working Group's (HWMWG) groundrules call for each member to search creatively for opportunities to address all interests and concerns and to explore fully all issues before forming conclusions. In the spirit of these groundrules, the members of the HWMWG agreed to evaluate other states' siting criteria and to discuss the advantages and disadvantages of various siting criteria. It was understood that by agreeing to discuss siting proposals no one was committing their support to either the concept of siting or a specific siting proposal. Indeed, the members of the HWMWG could not come to agreement on the siting of hazardous waste management facilities, and as a result, made no recommendation on this issue.

The evaluation of siting criteria of other states was conducted by a subcommittee consisting of Jerry Chura

(chair) and Jerome Anderson, Holnam Cement Company; Anne Hedges, Montana Environmental Information Center; Rep. Jody Bird; Tom Daubert, Ash Grove Cement Company; Sarah Barnard, Montanans Against Toxic Burning; Rachel Raue Sirs, Montanans for a Healthy Future; Al Lefohn; and Bill Price, Waste Management of Great Falls. The subcommittee began by reviewing a number of reports and analyses of siting issues and siting requirements prepared by other states, national organizations (e.g, National Governor's Association), and consulting firms. Based upon a review of this information, the subcommittee developed an analytical framework to compare the specific siting requirements of 22 selected states (UT, OR, CO, FL, TN, WA, ID, TX, NV, WY, IN, RI, NJ, AR, MO, MI, PA, OH, CA, MT, IL, NE). Copies of the analysis of siting requirements for individual states are available from EQC staff upon request. The subcommittee then reviewed the requirements of each of the selected states, summarized them into several key components of siting, and presented the results to the full HWMWG.

Using the framework developed by the siting subcommittee and a proposal developed by Sarah Barnard, the working group then discussed the various components of siting. The remainder of this section presents: 1) The key siting questions as identified by the siting subcommittee; 2) Information on how these siting questions have been answered by siting processes in other states; and 3) The general points of agreement and disagreement among HWMWG members on these siting questions.

A. What types of facilities should have siting requirements?

1. Other States

What are the key issues in siting?

The siting subcommittee found a great deal of variation among the various states in the types of facilities to which siting regulations are applied. Many states apply siting criteria to all treatment, storage, and disposal facilities. Other states apply siting criteria to:

a. Commercial facilities (e.g., FL, TN)

Some states apply siting requirements only to commercial (as compared to non-commercial) facilities; others place more stringent requirements on commercial facilities (e.g., AR, WY).

b. land-based facilities (landfills, for example)

Some states, such as Washington, Tennessee, Arkansas and Florida, have more stringent requirements for land-based facilities than for other types of treatment storage and disposal facilities.

c. Existing facilities (as compared to new or modified facilities).

Existing facilities may be exempt from all siting requirements (e.g., CO, TN) or some siting requirements (e.g., UT). Please note that the definition of "existing facility" varies from state to state. "Existing facility" may mean the facility has interim status under Boiler and Industrial Furnace regulations (although it may or may not be burning); is already operating; has applied for an operating permit; or, is anticipating applying for a permit.

d. Facility size (WY)

In the case of Wyoming, siting requirements vary depending upon the size of the storage facility.

2. HWMWG Discussion

The members of the HWMWG discussed but could not reach agreement on the types of facilities to which siting criteria should be applied. The following concepts were discussed as possible options:

- All treatment, storage, and disposal facilities, including existing permitted facilities, should be subject to siting requirements.

- Existing permitted treatment, storage and disposal facilities should be grandfathered and not subject to siting requirements. However, an existing permitted facility seeking a permit modification to allow a major modification or expansion would be subject to siting requirements.

- All treatment, storage and disposal facilities, except grandfathered facilities, should be subject to siting requirements.

- Transfer facilities should be subject to siting requirements. However, the siting requirements may be less stringent than the requirements for treatment,

storage and disposal facilities because transfer facilities pose less risk to human health and the environment.

B. Who should have the authority to site a facility?

1. Other States

a. U.S. Environmental Protection Agency

Wyoming and three other state do not have EPA approved hazardous waste programs. Consequently, the EPA would site facilities under the requirements of the Resource Conservation and Recovery Act (RCRA) in these states.

b. State Government

SITING AUTHORITY. The states of Indiana and Michigan have established a siting authority or commission that is responsible for making siting decisions. Typically, the authority has a broad-based membership including local government, citizens and industry.

SITING EVALUATION AS A SEPARATE STEP FROM THE PERMITTING PROCESS (e.g., NV, WA). Some states have established siting as a separate process from the permitting process. In these cases, the siting and permitting processes are bifurcated and the siting decision is made first.

SITING AS PART OF THE PERMITTING PROCESS (e.g., MT, OH, TX). Some states address siting as a component of the permitting process.

c. Local Government

SITING AS A FORMAL COMPONENT OF LAND USE REGULATION. The state of California has placed legal responsibility for siting decisions on local government. Typically, siting decisions are governed by land use planning and zoning ordinances.

NEGOTIATED SITE REVIEW PROCESS. Nebraska and several other states have established a process whereby local government, citizens and the applicant negotiate the conditions under which a proposed facility is acceptable to the community. The recommendation on siting that results from this

process may be advisory only or may be a final decision.

CERTIFICATION PROCESS BASED ON REVIEW CRITERIA. Colorado has established siting review criteria or standards in state law or rule but places the responsibility for analyzing and making a decision on the siting component of an application on local government. State agencies may play a role in technical analysis.

d. Shared State and Local Government

STATE DETERMINES NEED AND LOCAL GOVERNMENT DETERMINES LAND USE COMPATIBILITY. In Oregon, the state must first make a determination that there is a need for a facility. If the state determines there is a need, then the local government must determine whether or not the proposed facility is compatible with other land uses.

STATE ADDRESSES SITING -- LOCAL GOVERNMENT HAS ZONING AUTHORITY -- AND LEGISLATIVE APPROVAL IS REQUIRED. In Utah, the state agency administers a siting process that includes exclusionary criteria and the proposed facility must also comply with local zoning regulations. Finally, the proposed facility must be approved by the state legislature.

(Please note that in some cases state law either provides for or prohibits local government pre-emption of siting decisions.)

2. HWMWG Discussion

Currently in Montana, the state has the authority to permit a hazardous waste management facility and local government has the authority to prescribe appropriate land uses through planning and zoning. No member of the working group proposed that these responsibilities should be changed.

C. How should the public be involved in siting?

1. Other States

The siting subcommittee identified two key issues related to public participation is siting decisions: 1) How is the public involved? and, 2) When is the public involved?

Other states involved the public through public notice requirements, public hearing requirements (one or more hearings), by appointment to advisory or decision-making board or committee (i.e., siting authority), and by involving citizens as participants in negotiations.

State siting processes involved the public through one of the mechanisms identified above either before an application for a permit is submitted; at various points during the siting process and/or the permit review process; and after a decision has been made on a siting decision or permit application.

2. HWMWG Discussion

The working group discussed a proposal that a public hearing be required at the time an application for a hazardous waste management facility is submitted to DHES. The purpose of the hearing would be to explain the proposal to the public. A suggestion that the DHES develop a public participation plan at the beginning of the permitting process was also discussed.

Some members of the working group supported the idea of a public hearing upon receipt of an application and others did not.

The idea of an advisory board or siting commission was discussed as another mechanism for formalizing citizen participation in the decision-making process. This option was rejected because the working group was uncomfortable with giving authority to such a group.

D. When should the siting decision be made?

1. Other States

Other states make the siting decision either before the permitting process (e.g., CA, OR, NB, WA) or as a part of the permitting process (e.g., MT, MI, WY, TN).

2. HWMWG Discussion

The HWMWG considered several options for when the siting decision should be made relative to the permitting decision, but was unable to decide among them in the absence of specific information on the siting process. The options considered were:

a) make the siting decision before a permit application is submitted; b) make the siting decision concurrent with the permitting decision; or, c) make the siting decision after a permitting decision has been made.

E. What elements should form the basis for the siting decision?

1. Other States

Research by the siting subcommittee found that in other states a variety of criteria formed the basis for making the siting decision, including:

a. The siting requirements contained in RCRA;
b. The results of a negotiated agreement;
c. A needs assessment. For example, is the capacity needed? Is it needed to meet local needs? Will it result in more cost-effective disposal? What are the benefits and costs? etc.;
d. Standards
   i. Exclusionary standards (e.g., UT, NV). These are generally quantitative and include setbacks (facility must be at least 1 mile from a church) and prohibitions (facility cannot be located in a state park).
   ii. Non-Exclusionary standards (e.g., UT, CA, TN). These consist of performance standards such as facility must "pose no threat to public safety," facility must have "no detrimental effect" on water quality, or that a determination be made about the risk or probable impact of the facility;
e. Legislative approval; and
f. Consistency with land use or hazardous waste management plans.

2. HWMWG Discussion

The HWMWG discussed but could not reach agreement on elements that should form the basis of a siting

decision. The major points of disagreement were: 1) whether exclusionary (e.g., distance) criteria should be factored in the siting decision; 2) whether there should be exemptions allowed from siting criteria; and 3) whether the need for a facility should be determined by the market place or through a needs assessment conducted as a part of a siting process.

The members of the working group did agree upon the following statement:

A company's clearly defined pattern of compliance or noncompliance should be a factor considered in the decision to issue a permit for a hazardous waste management facility.

F. Variances, exemptions, or application of more stringent requirements.

1. Other states

Many state siting requirements contain provisions for variances to or exemptions from particular siting requirements, or, in some circumstances, a provision for the application of more stringent requirements. Examples of these include:

a. Allowance of variance or exemption from all or part of the siting standards or requirements (e.g., AR, UT, MT);

b. Discretion to apply more rigid standards or requirements than have been established in state law or regulation (IL).

c. Allowance of discretionary denial of an application that otherwise meets all established siting criteria (CA).

d. No provisions for variance or exemption because siting standards are non-exclusionary and determined on a case-by-case basis.

2. HWMWG Discussion

Based upon their inability to come to agreement on a series of previous issues, the members of the HWMWG agreed that consensus was unlikely on this issue.

III. Conclusion

The Hazardous Waste Management Working Group analyzed siting criteria from other states, discussed the advantages and disadvantages of various components of siting, and did not reach consensus on a siting proposal or on whether additional siting requirements were necessary for Montana.

Chapter Five:
Waste Minimization

ISSUE: **Evaluate the state's role in hazardous waste prevention, including the minimization of household hazardous waste.**

I. Introduction

Waste minimization was the last topic addressed by the Hazardous Waste Management Working Group (HWMWG) and, largely due to time constraints, it did not receive the attention it deserved and the level of discussion and analysis that previous topics received. Consequently, the HWMWG made no recommendations on this topic. The working group did, however, discuss the capacity assurance planning process, which is described in the section II, and collect information on the status of waste minimization efforts in Montana, which is presented in section III.

II. Capacity Assurance Planning

This section describes capacity assurance planning and Montana's 1993 Capacity Assurance Plan (CAP) submittal to the Environmental Protection Agency (EPA). The HWMWG heard a presentation on this process by the Department of Health and Environmental Sciences (DHES), but did not have adequate time to thoroughly discuss and review the CAP submittal.

The federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires that states assure the availability of hazardous waste treatment and disposal facilities that have adequate capacity to treat, destroy, or securely dispose of for 20 years the hazardous wastes reasonably expected to be generated within their borders. This capacity must be demonstrated by a state in order for the EPA to expend Superfund Remedial Action Trust funds in the state.

To facilitate the implementation of this statutory requirement, the EPA established a planning process whereby states submit Capacity Assurance Plans to the agency as the basis of their assurance. On May 1, 1994,

states were required to have submitted to EPA a CAP that contained data documenting their existing hazardous waste management systems and projecting through 2013 the demand for commercial management and the commercial management capacity for treating these hazardous wastes. Data was required to be submitted for the years 1991, 1993, 1999, and 2013 in 14 different waste management categories and focused primarily on waste regulated under RCRA Subtitle C.

What are the current requirements for waste minimization?

Montana submitted its CAP as part of a collective submission by the 17 states and territories that participate in the Western Regional Agreement on Capacity Assurance. Developed through the Western Governor's Association, this collective CAP submission demonstrates that sufficient management capacity exists in the West to manage all hazardous waste generated in western states now and in the next 20 years. This collective approach allows states that have no in-state disposal capacity, such as Montana, to demonstrate capacity assurance through the excess disposal capacity of other states, such as Utah.

III. Presentations

In order to gain information on current waste minimization requirements and practices, the HWMWG asked several people to make presentations to the group. Don Vidrine, DHES and Rosemary Rowe, EPA, discussed current and future waste minimization requirements. Several hazardous waste generators, Don Ryan, Columbia Falls Aluminum Company, Jim Stillwell, Montana Power Company, and Steve McCarter, Montana Department of Military Affairs, each then discussed their business' or organization's efforts to minimize the generation of hazardous waste. A summary of these presentations is presented below.

A. Don Vidrine, DHES

Don Vidrine, Hazardous Waste Program Manager, Department of Health and Environmental Sciences (DHES), discussed current federal requirements for waste minimization. First, Mr. Vidrine said EPA believes that hazardous waste minimization means reduction, to the extent feasible, of hazardous waste that is generated prior to treatment, storage or disposal of the waste. It is defined as any source reduction or recycling activity that results in either: (1) reduction of toxicity of hazardous waste; (2) reduction of total volume of hazardous waste; or (3) both, as long as the reduction is consistent with the general goal of

minimizing present and future threats to human health and the environment.

According to Mr. Vidrine, the Environmental Protection Agency's (EPA) waste minimization mandate stems from the Hazardous and Solid Waste Amendments of 1984 (HSWA). These amendments to the federal Resource Conservation and Recovery Act require EPA to protect the environment by minimizing the generation of hazardous waste and the land disposal of hazardous waste by encouraging process substitution, materials recovery, and properly conducted recycling, reuse, and treatment.

The HSWA amendments set forth three basic waste minimization requirements for generators and for treatment, storage, and disposal facilities (TSDFs). These require that:

1. Hazardous waste generators submit waste minimization information as part of their biennial reports;

2. Generators certify on waste manifests that they have a waste reduction program in place; and

3. As a permit requirement, all TSDFs must certify at least annually that they have waste reduction systems in place.

B. Rosemary Rowe, EPA

How are waste minimization requirements changing at the federal level?

Rosemary Rowe from the Helena Office of the Environmental Protection Agency discussed EPA's new initiatives on waste minimization. Ms. Rowe said that over the past several years, EPA has begun to place less emphasis on end of the pipe control of pollution and more emphasis on pollution prevention. She noted that EPA Administrator, Carol Browner, recently said that "this Administration is committed to making pollution prevention the guiding principle of all our environmental efforts."

Ms. Rowe said that the 1990 Pollution Prevention Act established the following preferred hierarchy for waste management for the nation:

1. Prevent or reduce pollution at the source whenever feasible;

2. Pollution that cannot be prevented should be recycled in an environmentally safe manner, whenever feasible; and

3. Disposal or release into the environment should be conducted in an environmentally safe manner.

According to Ms. Rowe, in May, 1993, Administrator Browner announced a draft strategy on hazardous waste minimization and combustion, the goals of which are to:

- Reduce the amount of hazardous waste generated and to establish a strong preference for source reduction over waste management.

- Strengthen federal controls governing hazardous waste incinerators and boilers and industrial furnaces.

- Enhance public participation in the permitting process.

- Require risk assessments at each combustion facility and take that assessment into consideration at the time of permitting.

- Ensure that regulations and permit requirements are vigorously enforced.

In conclusion, Ms. Rowe said that she expected EPA to continue to place emphasis on pollution prevention at the source and upon multi-media aspects of waste minimization.

C. Don Ryan, Columbia Falls Aluminum Company

Don Ryan, Columbia Falls Aluminum Company, discussed his plant's efforts to reduce its hazardous waste stream. Mr. Ryan said the primary hazardous waste generated by Columbia falls Aluminum Co. is spent potliners, which are considered hazardous because they contain cyanide. He said the amount of potliner generated is largely a function of cathode life, which, due to new technology, has increased from 2.84 years in 1979 to an 8.18 years in 1994. This increase in cathode life has resulted in a corresponding decrease in potliner generation from 16,708 tons in 1979 to 3,536 tons in 1994. Mr. Ryan said that Columbia Falls Aluminum has reduced its waste stream as much as is feasible, and that he expects over the long-run the plant will annually generate about 4,500 tons of waste potliner.

Mr. Ryan said waste disposal costs create a strong economic incentive for Columbia Falls Aluminum Company

to minimize its generation of hazardous waste. In 1979, when the plant generated 16,700 tons of spent potliner, the waste was disposed of at an on-site landfill. While this cost only 83,500 ($5/ton) at the time, the company is now paying $1 million to clean-up what is now a contaminated site. In 1992, the company shipped its 4,500 tons of hazardous waste to a RCRA landfill in Oregon at a cost of $820,000 ($150/ton). They are projecting that by 1997, when the waste must be shipped to Arkansas because of new federal standards that require treatment prior to land disposal, disposal costs will be $2.5 million ($500/ton). Mr. Ryan said that the alternate option of shipping spent potliners to the Montana City Ashgrove Cement kiln, assuming Ashgrove takes the waste for free, could cost as little as $100/ton.

D. Jim Stillwell, Montana Power Company

Jim Stillwell, Director of Environmental Support for Montana Power Company, discussed MPC's efforts at waste minimization. Mr. Stillwell said that MPC facilities include both small and conditionally exempt generators of hazardous waste, and that the company generates two types of wastes: operational or maintenance wastes, typically from line crews, and wastes from special clean-ups, including superfund sites. Common components of MPC's waste stream include cleaning and degreasing solvents, waste oil, transformer oil (both less than and greater than 50 ppm PCB contamination), used paint, antifreeze, batteries, metal cleaning wastes, and used oil absorbent pads.

Mr. Stillwell discussed some of the benefits of waste minimization. Waste minimization can be very economical; the cost of pick-up and disposal by Special Resource Management can run as high as $2470/ton. Other benefits noted by Mr. Stillwell include increased worker safety, reduced potential for regulatory violations, reduced liability from employee and other civil law suits, and potential relief from federal and state reporting requirements.

However, waste minimization also has limitations. According to Mr. Stillwell, waste minimization can be limited by the availability of capital for up-front investment. Also, new technology is constantly evolving, so considerable research time must be devoted to examining all possibilities and factored into the calculation of cost effectiveness. Mr. Stillwell said that waste minimization may limit the ability to substitute products or install engineering controls, and the cost effectiveness of new equipment purchases may diminish as the program expands.

Mr. Stillwell concluded by saying that at MPC, 90% of the possible reduction in the hazardous waste stream from waste minimization had been achieved. All the easy steps have already been taken, and that future progress on waste minimization will be at the margins.

E. Steve McCarter, Montana Department of Military Affairs

Steve McCarter of the Montana Department of Military Affairs discussed the elements that have lead to a successful pollution prevention program in the Montana Army National Guard.

First, Mr. McCarter said it is important to have command level support for the goals and objectives of waste minimization. In the case of the Army, Mr. McCarter said this was accomplished by an Executive Order from the Department of the Army mandating federal waste reduction requirements. As a result of this order, responsibility for environmental programs was elevated to the command level, and environmental issues were prioritized within the National Guard Bureau as number four among its top 10 priorities (behind readiness, equal opportunity, and health and safety).

Second, Mr. McCarter said it is essential to have training programs that inform all levels, including management, of the methods required to reduce waste releases and to maintain regulatory compliance. Waste minimization has been incorporated into routine environmental training required for compliance with federal regulations. The Montana National Guard has done this through in-house training, which saves 50% of the cost compared to contracting.

A third component of a successful pollution prevention program is data collection. When he started with the Montana National Guard, Mr. McCarter inspected all 27 facilities in the state. For each generator and site he identified all waste streams; current processes and procedures for generating waste; calculated total waste production and off-site disposal rates; identified local procurement and distribution procedures; researched and field tested potential non-hazardous or less hazardous substitutes; and researched alternative process technologies and operational procedures that might result in waste reduction.

Finally, Mr. McCarter said there needs to be evaluation criteria for determining the effectiveness of waste minimization efforts. In the case of the Army National Guard, these criteria were a risk analysis of current versus alternative practices, a use analysis to assess requirements for various products, and a cost analysis.

Mr. McCarter said that as a result of this work the Montana Army National Guard has taken steps to minimize its hazardous waste stream by developing a hazardous waste management plan with a set of facility level procedural controls; substituting less toxic or hazardous products where feasible; establishing engineering controls and procurement procedures; and reusing or recycling waste where possible. He also provided several examples of the cost effectiveness of equipment purchases such as anti-freeze recycling units (2.8 year payback period), hot water parts washers (2.9 year payback period), oil and fuel filter crushers (3.6 year payback period), and fuel filtering systems (1.4 year payback period).

IV. Conclusion

Because waste minimization was the last issue to be taken up by the Hazardous Waste Management Working Group, the group did not have time to either discuss this issue in depth or consider options for how the state might play a different role in waste minimization. Consequently, the HWMWG made no recommendations on this issue.

SENATE JOINT RESOLUTION 34

INTRODUCED BY ECK, SWANSON, FRITZ, BIANCHI, BARNHART, TUSS, WISEMAN, GRIMES, HIBBARD, FOSTER

A JOINT RESOLUTION OF THE SENATE AND THE HOUSE OF REPRESENTATIVES OF THE STATE OF MONTANA REQUESTING THE ENVIRONMENTAL QUALITY COUNCIL TO CONDUCT AN INTERIM STUDY OF THE MANAGEMENT AND DISPOSAL OF HAZARDOUS WASTE IN MONTANA AND TO REPORT ITS FINDINGS TO THE 54TH LEGISLATURE.

WHEREAS, the 1993 Legislature has addressed a variety of waste management issues, including regulation of waste incineration, medical waste, waste facility siting, funding for waste management permitting and enforcement, air quality aspects of waste management, and public involvement in waste management decisions; and

WHEREAS, all nonexempt quantities of hazardous waste generated in the State of Montana are exported for disposal elsewhere; and

WHEREAS, the burning of hazardous waste in cement kilns has been a contentious and divisive issue throughout the 53rd Legislative Session; and

WHEREAS, because Montana's waste management laws have been adopted in a piecemeal fashion, there has been no comprehensive examination of the integration of all of Montana's hazardous and special waste management regulations; and

WHEREAS, the Environmental Quality Council has longstanding involvement in solid and hazardous waste management issues, including discussions nearly 10 years ago of the need for a state facility for hazardous waste disposal and including the successful completion of a comprehensive solid waste management study that resulted in the adoption of extensive legislation during the 1991 Legislative session.

NOW, THEREFORE, BE IT RESOLVED BY THE SENATE AND THE HOUSE OF REPRESENTATIVES OF THE STATE OF MONTANA:

(1) That the Environmental Quality Council be requested to give priority to the study of the management and disposal of hazardous waste.

(2) That the study include but not be limited to a review of:

(a) hazardous waste reduction and recycling strategies;

(b) the feasibility of both public and private hazardous waste disposal options;

(c) the need for siting criteria for hazardous waste management facilities;

(d) the status of Montana's position within the regional hazardous waste capacity assurance plan; and

(e) the relationship between federal and state authority over various hazardous waste management issues, including regulation of the transportation of hazardous waste; AND

(F) THE ADEQUACY OF THE CURRENT REGULATORY FRAMEWORK FOR THE MANAGEMENT AND DISPOSAL OF HAZARDOUS WASTE IN MONTANA.

(3) That the Environmental Quality Council consult with federal, state, and local officials, industries, citizens, and other persons or groups with expertise or interest in hazardous waste management.

(4) That the Environmental Quality Council report its findings and recommendations to the 54th Legislature.

-END-

Appendix B

List of

Hazardous Waste Management Working Group Members

Jerry Noble, Chair
Environmental Quality Council
Great Falls, MT

Sarah Barnard
Montanans Against Toxic Burning
Bozeman, MT

Roger and Nora Lee Bessler
Oily Waste
Great Falls, MT

Jody Bird, Representative
Environmental Quality Council
Superior, MT

Jerry Chura
Holnam, Inc.
Three Forks, MT

Vicki Cocchiarella, Representative
Environmental Quality Council
Missoula, MT

Tom Daubert
Ash Grove Cement Company
Helena, MT

Karl Englund, Esq.
Darigold Dairy
Bozeman, MT

Les Graham
Montana Dairyman's Association
Manhattan, MT

Anne Hedges
Montana Environmental Information Center
Helena, MT

Dick Knox, Representative
Environmental Quality Council
Winifred, MT

Ted Lange
Northern Plains Resource Council
Billings, MT

Linda Lee
MontPIRG
Missoula, MT

Allen Lefohn, Ph.D
Clancy, MT

Ray Martinich
Montana Refining Company
Great Falls, MT

Shannon McNew
Missoula City-County Health Department
Missoula, MT

Dave Nation
Special Resource Management
Butte, MT

Bob Olsen
Conoco - Billings Refinery
Billings, MT

Scott Orr, Representative
Environmental Quality Council
Libby, MT

Don Ryan
Columbia Falls Aluminum
Columbia Falls, MT

Karen Bucklin Sanchez
Pollution Prevention Coordinator
MSU Extension Service
Bozeman, MT

Eric Schneider, Ph.D.
Livingston, MT

Don Sherman
Remediation Technologies, Inc.
Billings, MT

Rachel Raue Sirs
Montanans for a Healthy Future
Clancy, MT

Stan Sternberg
Environmental and Hazardous Waste Bureau
Montana Department of Transportation
Helena, MT

Tony Tweedale
Recycle Missoula
Missoula, MT

Don Vidrine
Hazardous Waste Program
Department of Health and Environmental Sciences
(Ex-Officio Member)

Jeff Weldon, Senator
Environmental Quality Council
Arlee, MT

Appendix C

FINAL GROUND RULES

Environmental Quality Council
Hazardous Waste Management Working Group
March 21, 1994

I. PURPOSE

A. The purpose of the Environmental Quality Council's Hazardous Waste Management Working Group (HWMWG) is to conduct to the best of its members' ability, by September, 1994, the hazardous waste study requested by the Environmental Quality Council.

B. The study will consist of two elements:

1. An analysis of the status and adequacy of the state hazardous waste regulatory framework, standards, implementation, and resources, including but not limited to:

   a. Consideration of whether the state can and should deal with conditionally exempt generators; and

   b. Consideration of siting criteria for hazardous waste facilities.

2. An evaluation of the state's role in hazardous waste prevention, including household hazardous waste.

II. CONSENSUS

A. All participants in the Working Group are committed to seeking consensus. Commitment to seeking consensus means that individual participants are committed to:

1. Expressing candidly their interests or concerns in the issues considered in conducting the study requested by the EQC;

2. Listening respectfully to and seeking to understand the interests and concerns expressed by other members;

3. Searching creatively for opportunities to address all interests and concerns; and

4. Exploring fully all issues before forming conclusions.

B. Seeking consensus does not mean that members are expected to compromise their values or adopt positions adverse to their interests.

C. The HWMWG will make decisions by consensus.

D. All recommendations from the HWMWG must reflect consensus; that is, all HWMWG members must agree to each recommendation.

III. MEMBERSHIP

A. Prior to March 1, 1994, membership in the HWMWG is open to anyone, except that only one representative from any given group at a time may participate in HWMWG decisions.

1. Alternates may participate in HWMWG meetings; however, members are expected to keep their alternates sufficiently informed about HWMWG deliberations to be an effective participant.

B. After February 28, 1994, new members may be added by consensus of the HWMWG. New members must agree to abide by the existing ground rules.

IV. OPEN MEETINGS

A. All HWMWG meetings, including any subcommittee meetings, are open to the public.

B. A minimum two week notice must be provided for each HWMWG meeting, including subcommittee meetings.

V. MINUTES

A. EQC staff will write and distribute to all people on the HWMWG mailing list draft summary minutes of all meetings, including subcommittee meetings, that capture decisions and key elements of the HWMWG's discussion.

B. Draft summary minutes will be available from EQC to others upon request.

C. The minutes from each meeting will be approved by the HWMWG or subcommittee at the subsequent meeting.

HAZARDOUS WASTE GENERATION DATA REPORTED TO DHES, 1986-1996.

Town	'86	'87	'88	'89	'90	'91	'92	Total
Butte	0	1	2.29	952	8.58	6.22	2.63	972.72
Malmstrom Air Force Base	5.19	9.17	2.70	4.84	16.25	24.85	42.15	105.15
Billings	3604.13	3776.38	4804.05	2914.12	6313.34	3282.79	4798.83	29493.64
Laurel	530.73	1042.93	935.32	2783.16	658.63	2960.59	3307.07	12218.43
Philipsburg	0	0	0	0	0	0	50.77	50.77
Decker	3.83	39.08	12.80	4.40	2.19	17.38	26.47	106.15
Cut Bank	2	0	48.05	47.14	0	0	40.91	138.10
Great Falls	25.93	20.64	19.77	13.38	13.17	122.48	90.71	306.08
Libby	3.02	4.68	8.65	31.27	9.04	5.81	763.07	825.54
Miles City	0	0	0	0	18.52	6.69	6.48	31.69
East Helena	0	0	0	0	0.68	1.98	0.13	2.79
Colstrip	3.43	18.26	40.27	663.94	19.59	1356.82	28.82	2131.13
Manhattan	0	0	0	0	2.41	1.11	0	3.52
Hot Springs	0	0.09	0.22	0.20	0.04	0	0	0.55
Glendive	0	0	10.17	57.64	11.10	14.58	41.10	134.59
Bozeman	18.91	16.53	21.75	14.54	12.46	81.03	105.03	270.25
Red Lodge	0	0	0	0.02	0	0	1.42	1.44
Kalispell	3.11	2.38	6.92	12.71	37.39	25.97	40.08	128.56
Missoula	103.57	76.68	93.17	156.49	129.58	162.67	269.60	991.76
Bonner	0	3.35	2.78	0	4.54	45.60	319.44	375.71
Helena	1.81	3.29	2.54	14.47	10.51	135.72	116.54	284.88
Plains	0	0	0	0.34	0	0	0	0.34
Babb	0	0	0	0	0	0	0.82	0.82
West Glacier	0	0	0	0	0	8.90	0	8.90
Livingston	62.04	0	16.47	60.38	41.96	11.03	16.77	208.65
Hardin	0	0	1.48	1.79	9.46	0.79	18.01	31.53
Hamilton	1.71	1.58	3.50	5.19	6.16	3.68	5.95	27.77
Fromberg	0	0	0	0	0.32	0.11	0	0.43
Gallatin Gateway	0	0	0	0	0.12	0	1.19	1.31
Black Eagle	48.95	35.49	12.92	174.52	172.95	118.28	153.26	716.37
Saint Regis	0	0	0	2.30	0	0	0	2.30
Columbia Falls	3.32	7.80	14.72	11.73	17.05	4145.57	7771.96	11972.15
Frenchtown	0	1.56	0.02	0.02	0.45	0.32	2.69	5.06
Havre	0	0	0	19.48	22.11	154.34	28.05	223.98
Fort Peck	0	0	0	277.12	1.49	450.75	6.88	736.24
Vaughn	0	0	0	0	20.95	0	0	20.95
Paradise	200.85	199.20	25804.17	258.39	612.54	17.50	1.38	27094.03
Bell Creek	0	0	0	0	0	237.97	0.29	238.26
Poplar	21.80	0	19.99	26	39.20	36.41	14.51	157.91
Gardiner	0	0	0	0	0	0	6.93	6.93
Three Forks	0	0	0	0	0	0	0.88	0.88
Somers	18000	515.38	189.52	0	0	57	223.72	18985.62
Polson	0.95	0	0	0	0	0	1.01	1.96
Columbus	0	0	0	0	0	0	1.46	1.46
Deer Lodge	0	1.29	2.18	0	8.11	10.59	2.87	25.04
East Missoula	0.04	0	0	0	0.20	0.21	0	0.45
Chinook	0.33	0	0.30	0.28	0	0.12	0.10	1.13
Joplin	0	0	0	0	4.09	0	0	4.09
Circle	0	0	29.95	0.90	29.95	42.01	394.14	496.95

Superior	1.77	0	1.48	9.84	2.11	2.20	3.10	20.50
Fortine	0	0	0.24	0.26	0.42	0.48	0.40	1.80
Troy	0	0	0	6	2.60	7.40	9.07	25.07
Ronan	0	0	0.31	3.15	0.41	1	0	4.87
Ballantine	0	0	0	0	0	0.44	0.40	0.84
Glasgow	0	0	0.88	1.65	1.42	0	17.39	21.34
Stevensville	0	8.68	3.03	5.58	1.32	0	0	18.61
Pablo	0	0	0.93	0.91	0.86	0.92	1.05	4.67
Shelby	0	0.09	0	0.20	0	0	0	0.29
Townsend	0	0	0	0	0.13	0	0	0.13
Belgrade	0.24	0.16	0	0	0	0	0	0.40
Hungry Horse	0	0	0.03	0	0.27	1.44	8.72	10.46
Broadus	0.29	0	0	0	0	0	0	0.29
Whitehall	0	0	2.75	2.78	2.75	2.85	6.10	17.23
Milltown	0	0	0	0.89	0	0	0	0.89
Fort Missoula	0	0	0	0	0	0.14	0	0.14
Chester	0	0	0	0	0	36	0	36
East Glacier Park	0	0	0	8.50	0	0	0	8.50
Forsyth	0	0	0	0	0.02	0.04	0.30	0.36
Sidney	0	0	0	0	0	0.95	0.88	1.83
Savage	0.76	0	0	0	0	0	0	0.76
Ennis	0	0	0	0	0	0	5.60	5.60
Dillon	0	0	0	0	0.10	0.20	0.22	0.52
Lewistown	0	0	0	0	907.77	0	0.90	908.67
Baker	0	0	0	0	0.24	0.70	0	0.94
Clark Canyon	0	0	0	0	0	0	9	9
Olney	0.17	0	0	0	0.83	0.92	0.79	2.71
Broadview	0	0	0	0	0	0	29.16	29.16
Browning	0	0	0	0	0.73	0.83	0.03	1.59
Trego	0	0	0	0	0	0	3.50	3.50
Boulder	0	0	0	0	0	0	0.31	0.31
Malta	0	0	0	0	0	0	0.06	0.06
Denton	0	0	0.34	0	0	0	0	0.34
Moon	0	0	0	0	0	0	0.07	0.07
Roy	0	0	0	0	0	0	0.58	0.58
Heart Butte	0	0	0	0	0	0	6.67	6.67
Avon	0	0	0	0	0	0.18	0	0.18
Gold Creek	0	0.27	0.62	0.46	0.26	0.20	0.16	1.97
West Fork Ranger Station	0	0	0	0	0	0	12.15	12.15
Weldon	0	0	0	0	0	0.23	0	0.23
TOTAL	22648.88	5785.96	32117.28	8548.98	9177.37	13604.99	18820.73	110704.19

Tons of Hazardous Waste Shipped from Montana
(as reported to the Montana Solid & Hazardous Waste Bureau)

Destination State	1986	1987	1988	1989	1990	1991	1992	Total
MONTANA	19652.17	2386.09	3141.67	2135.49	1470.55	301.06	303.04	29390.07
IDAHO	69.62	6.97	69.12	380.86	1093.91	934.89	7736.54	10291.91
UTAH	147.18	424.66	610.03	580.70	1045.01	4026.64	951.59	7785.81
WASHINGTON	18.76	422.24	2033.31	304.51	173.25	352.76	421.35	3726.18
TEXAS	0.45	0.31	0	0.20	1665.78	357.02	1666.33	3690.09
OREGON	66.49	9.20	39.59	1082.56	153.47	78.30	1746.35	3175.96
LOUISIANA	0	0	0.02	28.75	556.53	55.58	148.72	789.60
MISSOURI	0	0	0.27	0.12	1.49	107.41	448.34	557.63
OKLAHOMA	0	0	0	0	0	234.86	212.27	447.13
CALIFORNIA	1.98	1.89	1.58	35.62	19.71	294.51	63.56	418.85
KANSAS	0	0	11.50	3.92	3.61	215.14	173.64	407.81
ARKANSAS	0	0	5.37	33.90	11.06	291.62	40.53	382.48
ILLINOIS	0	0	27.82	28.08	70.05	36.00	39.34	201.29
COLORADO	2.70	19.76	16.95	13.60	29.10	57.41	16.87	156.39
NORTH DAKOTA	10.46	1.15	0.92	7.79	8.66	35.36	68.17	132.51
TENNESSEE	0	0	0	0	0.37	1.25	129.09	130.71
INDIANA	0	0	0	32.62	8.94	74.70	12.55	128.81
MICHIGAN	80.78	0.72	0	0	4.50	14.78	24.36	125.14
SOUTH CAROLINA	119.39	0	0	0	0	0	0	119.39
NEBRASKA	0	0	0	35.38	69.02	2.29	0	106.69
WISCONSIN	0.07	0	4.80	16.74	19.43	10.04	10.92	62.00
NORTH CAROLINA	0	0	0	0	4.28	25.87	18.03	48.18
KENTUCKY	0	0	0	0	0	5.59	6.51	12.10
ARIZONA	0	0	0	0	0.24	0.97	5.29	6.50
ALABAMA	0	0.02	0	5.81	0	0	0	5.83
MINNESOTA	0	0	2.18	0.29	0.71	0.44	1.61	5.23
WYOMING	0.40	0	0	0.14	0	1.98	0	2.52
NEW YORK	1.41	0	0	0	0	0	0	1.41
TOTAL	20254.05	3273.73	5965.13	4727.08	6414.17	7531.25	14269.36	62434.77

Appendix F

STATE OF MONTANA
CALENDAR 1992 ANNUAL REPORTS
OUT-OF-STATE MANAGEMENT SYSTEMS
AMOUNT BY MANAGEMENT
IN TONS

ARKANSAS:	
Incineration	39.46
Other	1.07
CALIFORNIA:	
Incineration	32.87
Fuel Blending	23.66
Other	4.60
COLORADO:	
Incineration	.03
Fuel Blending	11.44
Other	5.38
ILLINOIS:	
Fuel Blending	23.85
Transfer Fac.	3.94
Other	11.55
KANSAS:	
Energy Recovery	11.90
Fuel Blending	161.72
LOUISIANA:	
Deepwell	85.50
Fuel Blending	15.80
Other	47.42
MINNESOTA:	
Incineration	1.01
Other	.60
NORTH CAROLINA:	
Other	18.03

ARIZONA:	
Other	5.29
CANADA:	
Other	12.35
IDAHO:	
Fuel Blending	106.69
Landfill	7564.74
Transfer Fac.	5.40
Other	59.69
INDIANA:	
Incineration	12.55
KENTUCKY:	
Fuel Blending	6.51
MICHIGAN:	
Incineration	23.06
Other	1.30
MISSOURI:	
Energy Recovery	261.40
Fuel Blending	41.34
Incineration	57.30
NORTH DAKOTA:	
Energy Recovery	.49
Fuel Blending	1.00
Transfer Fac.	2.96
Other	63.72

STATE OF MONTANA
CALENDAR 1992 ANNUAL REPORTS
OUT-OF-STATE MANAGEMENT SYSTEMS
AMOUNT BY MANAGEMENT
IN TONS

OKLAHOMA:

Fuel Blending	41.39
Incineration	1.53
Landfill	4.18
Other	165.17

TENNESSEE:

Fuel Blending	129.03
Incineration	.06

UTAH:

Energy Recovery	1.00
Fuel Blending	2.31
Incineration	14.72
Landfill	905.03
Other	28.53

WISCONSIN:

Fuel Blending	.38
Incineration	.05
Other	10.49

OREGON:

Incineration	1.34
Landfill	1736.74
Other	8.27

TEXAS:

Deep Well	1491.62
Energy Recovery	3.02
Fuel Blending	21.60
Incineration	35.83
Other	114.26

WASHINGTON:

Energy Recovery	36.80
Fuel Blending	14.73
Incineration	35.42
Landfill	2.06
Transfer Fac.	184.27
Other	132.63

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AMOUNT BY WASTE CODES

LANDFILL:

D000	673.09	Tons
F000	596.78	Tons
K000	7,781.72	Tons
M000	767.91	Tons
P000	.45	Tons
U000	392.80	Tons
Total	10,212.75	Tons

DEEPWELL/UNDERGROUND INJECTION:

D000	1,577.12	Tons
Total	1,577.12	Tons

FUEL BLENDING:

D000	33.06	Tons
D001	24.35	Tons
F000	109.47	Tons
M000	434.57	Tons
Total	601.45	Tons

ENERGY RECOVERY:

D000	14.74	Tons
D001	3.32	Tons
F000	3.57	Tons
K000	272.39	Tons
M000	20.58	Tons
Total	314.60	Tons

INCINERATION:

D000	118.65	Tons
D001	8.51	Tons
D002	13.36	Tons
D003	.02	Tons
F000	23.38	Tons
K000	58.22	Tons
U000	.28	Tons
M000	32.95	Tons
P000	.06	Tons
Total	255.43	Tons

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TRANSFER FACILITY STORAGE:

D000	195.33	Tons
M000	1.24	Tons
Total	196.57	Tons

OTHER:

D000	571.76	Tons
D001	31.73	Tons
D002	19.26	Tons
D003	.16	Tons
F000	21.30	Tons
M000	45.28	Tons
P000	.86	Tons
U000	.02	Tons
Total	690.37	Tons

Appendix G

1992 TOP 20 WASTE CODES

CODE	QUANTITY	% OF STATE WASTE
K088	7757.71	41.2
MXXX	4006.52	21.3
D016	1725.59	9.2
F037	849.87	4.5
F038	784.00	4.2
DXXX	769.30	4.1
K048	600.00	3.2
D018	483.46	2.6
U240	394.59	2.1
FXXX	291.96	1.6
K051	276.19	1.5
D004	233.93	1.2
K052	122.75	.6
D008	110.12	.6
D001	71.09	.4
F007	55.28	.3
F032	49.94	.3
D002	44.49	.2
K049	40.50	.2
D003	40.12	.2
TOTAL (tons)	18707.41	99.5%

1992 TOP 20 WASTE CODES

K088
Description: Spent potliners from primary aluminum reduction
Hazard code: Toxic
Hazardous constituents for which listed: Cyanide (complexes)

MXXX
Description: Mixture of any waste codes - MXXX includes a waste that contains a combination of characteristic or listed wastes, or a combination of hazardous wastes from non-specific sources (F list) or specific sources (K list). For instance, 75% of the amount of waste reported as MXXX came from one refinery. This refinery combined the K048, K049, K050, K051 and F037 wastes. The top two largest MXXX waste generators combined to account for 96% of the amount of this waste code.

D016
Contaminant: 2,4-D (herbicide)
Characteristic: Toxicity Characteristic (TC) - regulatory level 10 mg/L

F037
Description: Petroleum refinery primary oil/water/solids separation sludge - Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in: oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow.
Hazard code: Toxic
Hazardous constituents for which listed: Benzene, benzo(a)pyrene, chrysene, lead, chromium

F038
Description: Petroleum refinery secondary (emulsified) oil/water/solids separation sludge - Any sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, those generated in: induced air flotation (IAF) units, tanks and impoundments, and all sludges generated in DAF units.
Hazard code: Toxic
Hazardous constituents for which listed: Benzene, benzo(a)pyrene, chrysene, lead, chromium

DXXX
Description: Mixture of any D001 through D043 waste codes - DXXX includes a waste that contains two or more of the characteristic, or "D" waste codes. The "D" waste codes are D001 for ignitability, D002 for corrosivity, D003 for reactivity and D004 through D043 for toxicity. About one-third of the wastes reported under DXXX came from a site where soils contaminated with various metals were being removed. Many hazardous waste generators utilize this waste code; the top ten generators of DXXX accounted for 75% of the amount of this waste code.

K048
Description: Dissolved air flotation (DAF) float from the petroleum refinery industry
Hazard code: Toxic
Hazardous constituents for which listed: Hexavalent chromium, lead

D018
Contaminant: Benzene
Characteristic: TC - regulatory level 0.5 mg/L

U240
Description: 2,4-D, salts & esters
Hazard code: Toxic

FXXX
Description: Mixture of any F001 through F039 waste codes - FXXX includes a waste that contains two or more of the listed hazardous wastes from non-specific sources. About 95% of the amount of waste reported as FXXX came from one refinery. This refinery combined the F037 and F038 wastes.

K051
Description: API separator sludge from the petroleum refinery industry
Hazard code: Toxic
Hazardous constituents for which listed: Hexavalent chromium, lead

D004
Contaminant: Arsenic
Characteristic: TC - regulatory level 5.0 mg/L

K052
Description: Tank bottoms (leaded) from the petroleum refinery industry
Hazard code: Toxic
Hazardous constituents for which listed: Lead

D008
Contaminant: Lead
Characteristic: TC - regulatory level 5.0 mg/L

D001
Description: a solid waste which includes liquids with a flash point less than 140° F, ...
Characteristic: Ignitability

F007
Description: Spent cyanide plating bath solutions from electroplating operations
Hazard code: Reactive, Toxic
Hazardous constituents for which listed: Cyanide (salts)

F032
Description: Wastewaters, process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenic formulations.
Hazard code: Toxic
Hazardous constituents for which listed: Benz(a)anthracene, benzo(a)pyrene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, pentachlorophenol, arsenic, chromium, tetra-, penta-, hexa-, heptachlorodibenzo-p-dioxins, tetra-, penta-, hexa-, heptachlorodibenzofurans

D002
Description: a solid waste which includes liquids with a pH less than or equal to 2 or greater than or equal to 12.5, ...
Characteristic: Corrosivity

K049
Description: Slop oil emulsion solids from the petroleum refinery industry
Hazard code: Toxic
Hazardous constituents for which listed: Hexavalent chromium, lead

D003
Description: a solid waste which is unstable and undergoes violent change without detonating, reacts violently with water, forms potentially explosive mixtures with water, ...
Characteristic: Reactivity