MINUTES

MONTANA SENATE
53rd LEGISLATURE - REGULAR SESSION

COMMITTEE ON NATURAL RESOURCES

Call to Order: By Chair Bianchi, on January 22, 1993, at 1:05 p.m.

ROLL CALL

Members Present:

Sen. Don Bianchi, Chair (D)
Sen. Bob Hockett, Vice Chair (D)
Sen. Sue Bartlett (D)
Sen. Steve Doherty (D)
Sen. Lorents Grosfield (R)
Sen. Tom Keating (R)
Sen. Ed Kennedy (D)
Sen. Bernie Swift (R)
Sen. Chuck Swysgood (R)
Sen. Henry McClernan (D)
Sen. Larry Tveit (R)
Sen. Cecil Weeding (D)
Sen. Jeff Weldon (D)

Members Excused: None.

Members Absent: None.

Staff Present: Paul Sihler, Environmental Quality Council
Leanne Kurtz, Committee Secretary

Please Note: These are summary minutes. Testimony and discussion are paraphrased and condensed.

Committee Business Summary:

Hearing:	None.
Executive Action:	None.
Agenda:	Informational presentations on hazardous waste burning and subdivisions.

Informational Presentation - hazardous waste burning:

Brady Wiseman, Montanans Against Toxic Burning, discussed the inception of the group and the complexity of hazardous waste burning. He stated heavy metals in potentially large quantities come out of the smokestack, and metals like lead, arsenic, mercury and cadmium cannot be destroyed. He questioned the effectiveness of the kilns, noting the existence of products of incomplete combustion (PICs). Mr. Wiseman discussed the causes

and results of a kiln upset, adding the industry average is 2 upsets per month. He stated the Department of Health and Environmental Sciences (DHES) only requires notification for upsets that last more than 4 hours.

Professor Ron Erickson, a chemist and professor of Environmental Studies at the University of Montana, handed out and discussed his prepared testimony (Exhibit #1). Professor Erickson directed the Committee to "Rachel's Hazardous Waste News", a newsletter addressing the issue of hazardous waste incineration (Exhibit #2).

Alan Lefohn, a Helena area chemist, showed the Committee overhead transparencies detailing his research involving hazardous waste incineration. He submitted a hard copy of his testimony (Exhibit #3).

Dr. Jim Hoyne, physician and Montana City resident, said organic chemicals, toxic heavy metals, and particulates are three broad categories of emissions that will result from the burning of hazardous waste. He noted that 90% of what goes up the smokestack has not been identified. Dr. Hoyne discussed dioxins and furans, noting they have been identified in the smokestacks, can cause cancer in very small amounts, and magnify the ability of other compounds to cause cancer. He said sensitivities to the chemicals differ among people, so health standards do not necessarily apply. Dr. Hoyne discussed the dangers of low level chronic exposure to lead and mercury.

Brady Wiseman stated MATB agrees with cement industry representatives that decisions should be based on facts, and added hazardous waste burning is not a risk-free proposition. He noted that burning hazardous waste does not destroy the chemicals, it turns the waste into something else and redistributes it. Mr. Wiseman stated burning hazardous waste is not an issue of jobs versus the environment.

Questions by the Committee and Responses:

Senator Grosfield asked if the hazardous waste burning process would be safe if upsets did not occur. Dr. Lefohn stated a buffer zone is needed around a hazardous waste burning facility to provide protection from upsets as well as continuous exposure.

Senator Keating asked if the EPA studies in "Rachel's Hazardous Waste News" have been finalized. Mr. Wiseman stated EPA has made preliminary findings available. He stated a thorough analysis will be made available in April and EPA will take regulatory action next fall.

Senator Keating asked if the EPA study included both hazardous waste burning kilns and non hazardous waste burning kilns. Mr. Wiseman stated the study included both types of kilns. He added

that all kilns emit various forms of dioxins. He said the 2,3,7,8 dioxin is the most dangerous form and it is produced by hazardous waste burning kilns.

Senator Kennedy asked if all the toxic substances burned would produce 2,3,7,8 dioxin. Dr. Erickson stated chlorinated substances produce the dangerous dioxins, but metals and non-halogenated substances do not. Senator Kennedy asked if any hazardous wastes exist that would be safe to burn in a cement kiln. Dr. Erickson stated a small percentage of hazardous wastes contain no halogen and added if they could be transported safely, they would probably be safe to burn.

Senator Doherty asked Dr. Hoyne to comment on effects of an upset versus effects of low level chronic exposure. Dr. Hoyne discussed differences between acute lead poisoning and day to day exposure. Dr. Lefohn added that the best security is a buffer zone around facilities burning hazardous waste.

Senator Swysgood asked Mr. Wiseman what the alternatives are to burning Montana's hazardous waste in cement kilns. Mr. Wiseman said the waste does not have to be buried or burned, and added he has heard of over a dozen different waste treatment technologies. Dr. Erickson said organic halogens can be treated chemically.

Senator Weeding asked what the residual life of the toxic material is. Dr. Lefohn said it depends on the chemical and its form.

Informational Presentation - subdivision reform:

Tom Hopgood, Montana Association of Realtors (MAR), said everyone in the Association agrees that the Montana Subdivision and Platting Act is flawed, but unanimity does not exist within MAR on specifically how to address the problems. Mr. Hopgood noted the review process is unpredictable, and stated he does not think zoning belongs in the subdivision process.

Steve Mandeville, MAR legislative chairman, handed out his business card with a list of issues which subdivision legislation should address (Exhibit #3A). Mr. Mandeville also distributed copies of newspaper articles dealing with subdivisions (Exhibit #4 and #5). He noted he does not believe that all non-reviewed land splits are bad, and discussed the rights of property owners. Mr. Mandeville said statute exists for government authorities to develop and implement land use through zoning, but most have not had the courage to do so. He noted subdivision should not be a substitute for land use planning. Mr. Mandeville stated affordable housing and development costs are tandem issues, adding more regulation means higher costs. He stated "cost imposition on development can and will drive away affordable housing." Mr. Mandeville addressed subjective versus objective review, stating that subjective review results in hearings "where

the vociferous minority dictates action."

Dan McGee, Montana Association of Registered Land Surveyors (MARLS), discussed the concept of planning versus subdivision, noting that planning is conceptual, not regulatory. He stated laws exist that allow for broad, comprehensive planning, but they are not used by governing bodies. Mr. McGee discussed land capability studies he has conducted, and said the "basis of need" criteria and the "applause meter" have caused problems. Mr. McGee stated he was involved in the initial development of the Story Hills near Bozeman. He said $60,000 was spent on the design of the single family residential subdivision, and was approved by every governmental entity. He said the culdesacs the developers designed met county standards, but the public works director did not want to have his snow plow trucks turning in circles. Mr. McGee stated he doubled the size of the culdesacs, and the subdivision passed through annexation, zoning, and planning. He said the subdivision was finally denied at the Bozeman City Council meeting "because one man didn't like the idea of his trucks having to turn around in a circle." Mr. McGee stated that kind of subjectivity should be eliminated. He discussed problems he has had dealing with unclear regulations in every county, adding whatever legislation is passed needs to show clear intent.

Esther Bengtson, Billings realtor and former Senator, said most subdivision bills that have been before the legislature "violate the basic American belief that we have private property rights, and we have the right to buy and sell and enjoy those property rights." Ms. Bengtson said numerous checks are already in place to control development, and a statewide comprehensive law is unnecessary. She said the problems with subdivisions will not be solved by eliminating the 20 acre exemption or the occasional sale, adding the market will not allow Montana to be cut up into 20 acre parcels.

ADJOURNMENT

Adjournment: 2:55 p.m.

Don Bianchi
SENATOR DON BIANCHI, Chair

Leanne Kurtz
LEANNE KURTZ, Secretary

DB/lk

930122NR.SM1

ROLL CALL

SENATE COMMITTEE Natural Resources DATE 1/22/93

NAME	PRESENT	ABSENT	EXCUSED
Bianchi	✓		
Hockett	✓		
Bartlett	✓		
Doherty	✓		
Grosfield	✓		
Keating	✓		
Kennedy	✓		
Swift	✓		
Suzsgood	✓		
McClerman	✓		
Tveit	✓		
Weeding	✓		
Welch	✓		

FC8

Attach to each day's minutes

Testimony before Montana Senate Natural Resources Committee on Cement Kilns

Ron Erickson, U. of Montana, since 1965; Ph.D. Chemistry, U. of Iowa 1959

As a chemist sees it

What's being treated? Hazardous waste of three types

1. Non-halogenated organic compounds
2. Halogenated organic compounds
3. Metals such as lead, cadmium, and mercury

What's the treatment? Combustion at high temperatures

A football analogy; Passes -complete, incomplete or intercepted

1. Complete Combustion

   What counts as complete? 99%, 99.9%, 99.9999% ?

2. Incomplete Combustion

   Metal toxicity is not changed

   Products of incomplete combustion (PICS)

3. "Interception" Is there an analogy?

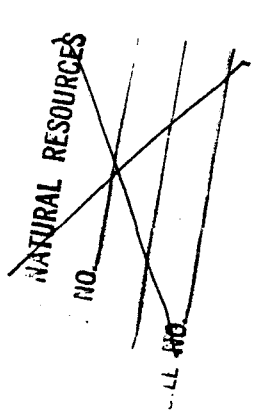
   Yes; new chemical reactions in the combustion zone

Some history on 2,3,7,8 Tetrachlorodibenzodioxin "Dioxin"

1. Vietnam, Agent Orange
2. Toxicity
3. Dow Chemical 1980 "Trace Chemistries of Fire"
4. Lake sediments (1984 Isle Royale, others) 1940 as a beginning

Conclusion: "Dioxin" can be formed during combustion <u>if</u> chlorinated organic compounds are present.

The relevance of "Dioxin" to cement kilns.



1. Risk analysis says 99.9999% of "Dioxin" must be destroyed.
2. Air Force 1977. Incineration of only 99.9%
3. Rachel's Hazardous Waste News #312

   All hazardous waste incinerators fail to meet the standard.
4. Rachel's Hazardous Waste News #314

   Cement and kiln dust from kilns which use hazardous waste contain "Dioxin".
5. An inference: "Dioxin" leaves the plant from the stack too.
6. Open question. Does it come from incomplete combustion or from recombining?

Environmental Chemist's Conclusions

1. For nonhalogenated, non-toxic organic compounds carefully controlled incineration may be a useful method of destruction.
2. For toxic, rare, but useful metals such as lead, cadmium, and mercury it's silly to use incineration because the method simply disperses them.
3. It is clearly dangerous to attempt to destroy halogenated organic compounds by incineration.

RACHEL'S HAZARDOUS WASTE NEWS #312

Providing news and resources to the Movement for Environmental Justice -- November 18, 1992

NEW EPA MEMO SAYS ALL HAZARDOUS WASTE INCINERATORS FAIL TO MEET REGULATIONS

An internal memo sent to all 10 regional offices of EPA [U.S. Environmental Protection Agency] by Sylvia Lowrance, EPA Director of Solid Waste, confirms that hazardous waste incinerators cannot meet EPA requirements for near-total destruction of hazardous wastes. (See *RHWN #280.*)

EPA's incinerator regulations require 99.99 percent destruction of all hazardous wastes and 99.9999 percent destruction of especially-hazardous wastes such as PCBs and dioxins. The Lowrance memo dated Sept. 22, 1992, and interviews with Sylvia Sasseville of Ms. Lowrance's staff, confirm that the agency possessed scientific information as early as 1984 showing that hazardous waste incinerators cannot destroy some of the most dangerous wastes as completely as the regulations require.

EPA possessed this information but chose to ignore it when hazardous waste incinerator regulations were established for dioxin in 1985.

These new revelations cast doubt on the safety of all hazardous waste incinerators, and could conceivably lead to charges of criminal wrongdoing by some EPA officials. The agency has been touting incineration as "safe" for more than a decade. When asked, agency officials define "safe" as "in compliance with all regulations." In sum, the agency established regulations in 1985 knowing no incinerator could comply, and now the agency's own logic forces the conclusion that no hazardous waste incinerator can be operated safely. It would appear to expose the agency to liability claims by anyone believing they have been harmed by incinerator emissions.

EPA's acknowledgement of its malfeasance surfaced during an incinerator battle in Jacksonville, Arkansas. For the past decade Arkansas Governor Bill Clinton and the citizens of Jacksonville, have been battling each other over the Governor's plan to burn dioxin-contaminated chemical warfare agents in a residential neighborhood of Jacksonville. (See *RHWN #311.*) EPA officials in Region 6 (Dallas, Texas) supported the Governor's plan.

The Jacksonville wastes contain an estimated 75 pounds (34 kilograms) of pure dioxin, a poison that kills laboratory animals such as guinea pigs exposed to only a few micrograms, making it one of the most powerful poisons ever found. From 1988 onward, federal and state environmental officials in Jacksonville said publicly on numerous occasions that an incinerator could destroy dioxin with 99.9999 percent efficiency, thus eliminating all health threats to the surrounding community. The Lowrance memo makes it clear that Region 6 EPA officials were either lying or were kept ignorant by officials at EPA headquarters in Washington who knew the truth.

EPA's regulatory failure was discovered when an independent researcher, chemist Pat Costner of Greenpeace, analyzed government data from the Jacksonville incinerator as it was being tested before startup. In early 1992, Costner analyzed government data collected during an October, 1991, trial burn in Jacksonville. Her analysis revealed that instead of 99.9999 percent ("six nines") destruction, the Jacksonville incinerator had achieved only 99.96 percent destruction of dioxin. Federal and state officials confirmed her analysis. At that rate the Jacksonville incinerator would release 400 times as much dioxin as the regulations say it should.

How the Regulations Work

EPA's hazardous waste regulations require the owner/operator of a new incinerator to select several POHCs (principal organic hazardous constituents)--chemicals to be destroyed. The selected POHCs must be harder to burn than dioxin. The POHCs are "surrogates" for dioxin--they "stand for" dioxin or "represent" dioxin during the test. During a "trial burn," the POHC surrogates are fed into the incinerator in nearly pure form under ideal laboratory conditions, and the incinerator's ability to destroy them is measured. If a destruction/removal efficiency (DRE) of 99.9999 percent is achieved with the POHCs, then EPA allows the owner/operator to assume that 99.9999 percent of dioxin will also have been destroyed. It is this assumption that EPA has known since 1984 is false.

The trial burn procedure was followed precisely in the Jacksonville case, with one exception. The owner/operator inadvertently burned some actual dioxin along with the POHCs during the trial burn and dutifully reported the DRE for the POHCs, but did not analyze the data to establish a DRE for dioxin. Costner did the calculation for dioxin and revealed that dioxin was not destroyed with an efficiency anywhere near six nines.

Since Region 6 officials had been promising for several years that the Jacksonville incinerator would destroy dioxin with six nines efficiency, Costner's analysis made them look like fools or liars or both. Region 6 called headquarters for guidance and on September 22, Sylvia Lowrance sent out a memo telling regional EPA offices how to handle this embarrassing situation.

The Lowrance memo says, in part, "The low dioxin DRE in this recent [Jacksonville] case was consistent with our current body of incinerator performance data, which show a very clear trend of decreasing DRE for hazardous constituents with decreasing incoming concentration of the constituents in the waste feed. (That is, the lower the constituent concentration in the waste, the lower the DRE.) The data show that a properly operating incinerator, which reached 99.99% DRE (four nines) on higher concentrations of POHCs, will often achieve less than four nines when the concentration of a POHC (principal organic hazardous constituent) in the

waste is less than 1000 ppm [parts per million]. At this time we have not established a definitive scientific explanation for this phenomenon," the memo says.

The Lowrance memo goes on to point out that, in establishing regulations for incineration of dioxin-contaminated wastes, in 1985, EPA relied on risk assessments in which the agency assumed that 99.9999 percent destruction was routinely achieved. "For this reason, the risk assessment calculations performed in the course of the rulemaking may not be representative in some cases," the Lowrance memo says. In sum, the entire superstructure of regulations created for dioxin incineration in 1985 was based on assumptions that the agency knew at the time were false. Indeed, in an internal EPA memo dated October 24, 1985, Robert A. Olexsey, who was at the time an employee of EPA's Hazardous Waste Environmental Research Laboratory, wrote "We have a problem with the 'surrogate POHC' approach for the determination of the dioxin destruction efficiency. In our incinerator and boiler field tests, we found a consistent relationship.... In essence, across the entire test program, POHC DRE increased with increasing POHC concentration in the feed. If this relationship holds for dioxin (we see no reason why it would not), reporting the DRE for the dioxin material as being identical to that of the higher concentration surrogate will result in overstating the DRE for the dioxin waste." Olexsey went on to recommend that dioxin itself be measured during incinerator tests, to check the efficiency of destruction, rather than testing a POHC and assuming that it revealed something about dioxin. Olexsey's advice was not followed.

During 1984-1985, John C. Kramlich of the Energy and Environmental Research Corporation (Irvine, Cal.) completed a contract study for EPA, analyzing the failure of hazardous waste incinerators to destroy wastes. EPA did not publish the Kramlich study until 1989. Kramlich wrote, "[Our] results indicate that current technology has difficulty meeting the licensing regulations when the waste represents less than 1000 ppm [parts per million] of the feed stream. This finding has significance with respect to waste streams contaminated by low concentrations of extremely hazardous materials (e.g. dioxin or chlorophenol contaminated pesticides)."[1]

EPA's data reveal that all incinerators fail in the same way, but the public health hazard seems especially great at sites burning wood-preservative wastes, pesticides, PCBs, pulp and paper mill sludges, or dioxins. All contaminated-soil incinerators, all Superfund cleanup incinerators, and all of the Army's proposed chemical weapons incinerators are also cast into doubt by EPA's recent admissions. Furthermore, all of the agency's risk assessments and rulemakings regarding hazardous waste incinerators are now known to have been based on false assumptions. In short, the entire regulatory structure intended to guarantee the protection of public health and safety from hazardous waste incinerators has now been thrown into grave question.

---

[1] John C. Kramlich and others, *Experimental Investigation of Critical Fundamental Issues in Hazardous Waste Incineration* (Springfield, VA: National Technical Information Service [NTIS], September, 1989.) This is EPA document No. EPA/600/2-89/048 available from NTIS for $26.00; phone (800) 553-6847 and request NTIS document No. PB90-108507. See pgs. 5-1, 5-2.

IMPORTANT CONFERENCES IN EARLY DECEMBER

Southern Community/Labor Conference

The Southern Community/Labor Conference for Environmental Justice will be held Dec. 4-6 at Xavier University in New Orleans, Louisiana. This conference is a regional follow-up to the People of Color Conference held in Washington, D.C. a year ago.

For more information, phone (404) 622-4991 in Atlanta, Georgia.

On Dec. 3, the day before the conference begins, Tulane University Law School and the National Conference of Black Lawyers will sponsor a one-day continuing education seminar in New Orleans to help lawyers and legal workers better serve the environmental justice movement. Contact: Marcia Zimmerman at (504) 865-5900 in New Orleans.

Chlorine-Free Great Lakes

A conference called "Chlorine-Free Great Lakes: Local Action for a Global Solution" will be held at St. Mary Center in Monroe, Michigan December 4-6. The conference will offer workshops on every major use of chlorine, the problems chlorine creates in humans and the environment, and alternative technologies and substitutes available to replace chlorine. This conference is aimed at community activists, environmentalists, workers, and scientists.

Registration is limited, so act quickly: phone Bonnie Rice in Chicago at (312) 666-3305.

Rachel's Hazardous Waste News (ISSN 1065-4623) is published weekly by
Environmental Research Foundation (ERF)
Telephone (202) 328-1119; fax: (202) 483-5110
Editor: Peter Montague, Ph.D.
Associate editor: Maria B. Pellerano
Circulation manager: Michael Gibbs
Research assistant: Andrea K. Fearneybough
Subscription rates: $40 per year for individuals and citizen groups; $80 for government agencies; $15 for students and seniors with ID; $400 for businesses and professionals; in Canada and Mexico, add $6.00; in all other countries, add $11.00. All payments in U.S. funds drawn on U.S. banks. Visa & Mastercard accepted. *Rachel's Hazardous Waste News* is not copyrighted; we encourage reprinting so long as you send us a copy. Printed on 100% recycled paper.

Environmental Research Foundation
P.O. Box 73700
Washington, DC 20056-3700

ADDRESS CORRECTION REQUESTED

TO:

RACHEL'S HAZARDOUS WASTE NEWS #314

Providing news and resources to the Movement for Environmental Justice -- December 2, 1992

CEMENT AND KILN DUST CONTAIN DIOXINS

During routine preparation of a *Report to Congress on Cement Kilns*, the U.S. Environmental Protection Agency (EPA) has learned that cement and cement kiln dust contain dioxins and furans (both of which are powerful poisons in animals and humans), according to a briefing document dated October 8, 1992, prepared by EPA staff for EPA's Director of Solid Waste, Sylvia Lowrance. The October briefing document also says 20 percent of the cement kiln dust that EPA tested contains the non-natural radioactive elements plutonium-238, plutonium-239 and cesium-137. Dioxins are the most powerful carcinogens (cancer-causing agents) ever tested in laboratory animals; plutonium is the most potent carcinogen in humans ever discovered.

Cement is a principal component of pipe often used to distribute drinking water in many American cities. Cement kiln dust is a byproduct of cement manufacture and is routinely given or sold to farmers as a soil treatment, or is discarded into pits or is piled on the ground near cement kilns in an uncontrolled fashion. According to Bill Schoenborn, an EPA staff member working on the *Report to Congress*, about 6 million tons of kiln dust is disposed of each year by cement kilns, 5.1 million tons of it buried on-site, and 900,000 tons of it shipped off-site for use in stabilizing other wastes (such as sewage sludge) or as a soil additive on farms. Cement kiln dust has previously been reported to contaminate groundwater with the toxic metals lead and chromium,[1] but until now no one has reported dioxins, furans, plutonium or cesium-137 in cement or cement kiln dust.

The *Report to Congress* is required by the federal Resource Conservation and Recovery Act (RCRA), the nation's basic hazardous waste law. Like mine wastes, cement kiln dust was initially exempt from RCRA because it is a high-volume waste presumed to be low in toxicity. Cement clinker (that is to say, cement itself) is exempt from RCRA because it is a product, not a waste. Section 8002(o) of RCRA required EPA to study cement kiln dust and to write a report for Congress on its findings. For several years, EPA dragged its feet preparing the report. Then Environmental Defense Fund (EDF) brought a lawsuit, and now EPA is under a court order to finish the report by April, 1993.

In the course of preparing the *Report to Congress*, EPA randomly selected 15 cement manufacturing plants (called kilns) for sampling, out of the 114 such plants presently operating in the U.S. Of the 15 plants sampled, eight burn hazardous waste as fuel and seven do not. In recent years, cement kiln operators have increasingly been using hazardous waste as fuel, to reduce fuel costs and thus increase profitability. The practice has proved controversial. (See *RHWN #174* and *#243*.) Opponents of the practice say they fear cement will become contaminated with industrial poisons. Cement is a key raw material in concrete pipe for water delivery systems, and in concrete block and other concrete materials used in construction of private homes, commercial dwellings, public buildings, bridges and highways. Seventy to 80 million tons of cement are produced in the U.S. each year, depending on market demand.

Sampling Results

EPA took 15 samples of "clinker" (the product of a kiln, from which cement is made), plus 28 samples of dust (the unwanted byproduct of a kiln). All samples were analyzed for metals, chloride, cyanide, fluoride, total sulfate, total organic carbon, moisture content, and radioactive elements.

Samples from six kilns (4 burning hazardous waste, 2 not burning hazardous waste) were tested for dioxins and furans, volatile organic compounds, semivolatile organic compounds, and pesticides. All chemical analyses were completed by EPA's National Air and Radiation Environmental Laboratory (NAREL) in Alabama.

Dioxins and furans were detected in all samples of "clinker" and all samples of kiln dust analyzed for these compounds. The October briefing document says that the dioxin molecule known as 2,3,7,8-TCDD, the most potent poison in the dioxin family, was only identified in samples from kilns burning hazardous waste. Other dioxins were found in samples from kilns not burning hazardous waste, but no 2,3,7,8-TCDD. However, the October briefing document says it is not possible to generalize these differences to the entire 114 operating cement kilns.

Samples of cement kiln "clinker" did not contain pesticides or semivolatile organics. Clinker was not analyzed for volatile organics. On the other hand, cement kiln dust contained amounts of the volatile organics benzene and acetonitrile that exceeded RCRA limits "in a number of the samples of hazardous waste burners" but not in samples from kilns not burning hazardous wastes. The dust from one kiln not burning hazardous waste proved to be high in methylene chloride, according to the October briefing document.

These findings lend support to the view that burning hazardous waste in a cement kiln increases the amount and potency of toxins in the resulting cement kiln dust and perhaps in the cement itself.

At three kilns (2 burning hazardous waste, one not burning hazardous waste) levels of naturally-occurring radioactive radium-226 exceeded the cleanup standard for uranium mine and mill wastes (the standard being 5 picoCuries per gram). Cesium-137, a non-natural radioactive element, was present in the dust of 26 percent of the kilns tested (4 out of 15)—one hazardous waste burner and three non-hazardous waste burners. Plutonium-238 and plutonium-239 were detected in kiln dust samples from 3 of the 15 kilns tested. Each of

these 3 facilities is "located near a DOE [U.S. Department of Energy] nuclear weapons production/testing facility," according to EPA's October briefing document. Plutonium and cesium-137 do not occur in nature but are created by nuclear bomb explosions and in nuclear power reactors.

A second EPA briefing document dated November 24, 1992, contains additional information about the problem of potent toxins being found in cement and in cement kiln dust. The document is titled "OSW Office Briefing on Cement Kiln Dust Risk Screening" and it contains a summary of a risk assessment that is being conducted by the EPA's Communications and Budget Division within the Regulatory Analysis Branch, Office of Solid Waste.

The November briefing document outlines two risk assessment scenarios: one in which cement dust blows off-site and affects a person living 750 feet from an active waste pile, and a second in which an individual is presumed to be living on top of an abandoned waste pile. No risk assessment was reported for the case of a farmer growing crops in soil to which cement kiln dust has been added.

Furthermore, no risk assessment is reported for the dioxins and furans measured in cement clinker, which it to say, in cement itself.

Based on the two risk assessment scenarios, the November briefing document describes amounts of toxins in cement kiln dust that appear to be acceptable, which is to say will only give cancer to one in 100,000 individuals so exposed. The November document lists 22 instances in which one or more EPA tests of cement kiln dust exceeded the criteria developed in the risk assessments. Criteria that are exceeded by one or more samples include: 2,3,7,8-TCDD, total dioxins, total dioxins and furans, total hexachloro dioxins, arsenic, beryllium, cadmium, chromium, lead, and thallium, plus the following radioactive elements: bismuth-214, cesium-137, potassium-40, lead-212, lead-214, radium-226, radium-228 and thorium-227.

The purpose of the risk assessments reported in the November document is to help EPA decide whether the agency needs to regulate cement kiln dust as a legally hazardous waste or not. Declaring cement kiln dust a legally hazardous waste would greatly increase the cost of waste disposal for some cement kilns, and thus might reduce the profitability of some kilns.

EPA employee Hugh Kaufman has previously charged that the agency has been "accommodating the regulated cement kiln hazardous waste incineration industry with nonexistent, or at best loose, regulation..."[2]

Now that EPA has found dioxins in cement clinker, and dioxins and radioactive elements in cement kiln dust, the agency will likely come under considerable pressure to regulate all cement kiln wastes as hazardous wastes.

For their part, citizens seem likely to start asking themselves anew whether kilns can be good neighbors.

---

[1] Jeffrey D. Smith, "Cement Kilns 1991," *EI Digest* (August, 1991), pgs. 20-32.

[2] Kaufman made his charge in a letter to EPA chief William Reilly dated Dec. 7, 1990; on February 21, 1991, cement kilns burning hazardous waste became regulated under the so-called "BIF" (boiler and industrial furnace) regulations, which can be found in the *Federal Register* February 21, 1991, pgs. 7134-7240. See also *Federal Register* July 17, 1991, pgs. 32688-32692; August 27, 1991, pgs. 42504-42517; September 5, 1991, pgs. 43874-43877; and August 25, 1992, pgs. 38558-38566.

WE ARE MOVING ON DECEMBER 9

Environmental Research Foundation will move its offices to Annapolis, Maryland on December 9, 1992. After December 9 our mailing address will be:

Environmental Research Foundation
P.O. Box 4878
Annapolis, MD 21403

Our new telephone number will be (410) 263-1584. Our fax number will be (410) 263-8944.

The new telephone number for the Rachel database will be (410) 263-8903. Furthermore, after December 9 the Rachel system will require callers to use no parity and 8 data bits (instead of even parity and 7 data bits). Please change your communications software accordingly when you dial Rachel after December 9. Finally, your old user identification (user id) and password will not work after December 9; instead, when you log on for the first time the system will ask you for your real name and will then ask you to select a password for yourself, just as you do on most bulletin board systems.

Rachel's Hazardous Waste News (ISSN 1065-4623) is published weekly by
Environmental Research Foundation (ERF)
Telephone (202) 328-1119; fax: (202) 483-5110
Editor: Peter Montague, Ph.D.
Associate editor: Maria B. Pellerano
Circulation manager: Michael Gibbs
Research assistant: Andrea K. Fearneybough
Subscription rates: $40 per year for individuals and citizen groups; $80 for government agencies; $15 for students and seniors with ID; $400 for businesses and professionals; in Canada and Mexico, add $6.00; in all other countries, add $11.00. All payments in U.S. funds drawn on U.S. banks. Visa & Mastercard accepted.

Environmental Research Foundation
P.O. Box 73700
Washington, DC 20056-3700

ADDRESS CORRECTION REQUESTED

FIRST-CLASS MAIL
U.S. POSTAGE
PAID
Washington, DC
Permit No. 4682

TO:

Expires: ≈318

Dr. Mary O'Brien
Rankin Hall, Environmental Studies
Program, University of Montana
Missoula, MT 59812-1084

TECHNICAL TESTIMONY OF

ALLEN S. LEFOHN, PH.D.
CLANCY, MONTANA

JANUARY 22, 1993

NATURAL RESOURCES SENATE COMMITTEE

DR. ALLEN S. LEFOHN

Biographical Sketch

- Received Ph.D. in physical chemistry from the University of California at Berkeley.

- Research involves

  The development of dose-response relationships describing the effects of pollutants on the ecosystem.

  The analysis of air quality data for assessing the effects of air pollutants on human health and the ecosystem.

  The analysis of acidic deposition wetfall and effects data to better assess the potential for biological effects.

  The analysis of air quality data and changes associated with global climate change.

- Chairman of the United Nations World Meteorological Organization (WMO) Expert Meeting to evaluate surface ozone exposures and trends at remote locations in the world.

- The lead author of the White House report: State-of-Science Report No. 7: Air Quality Measurements and Characterizations for Vegetation Effects Research.

- Published over 150 peer-reviewed papers and technical reports, edited 4 books, and presented numerous oral papers.

- Serves as Executive Editor of the prestigious scientific journal *Atmospheric Environment.*

- Member of Technical Council of the Air & Waste Management Association.

- Resides with family in Clancy, Montana.

EXHIBIT #3
DATE 1-22-93

BOTTOM LINES

- Montana's citizens must have a say in whether hazardous waste burning is a desired growth industry in Montana.

- Decisions should be based mainly on technical facts and not solely on emotion and fear.

- We have to make decisions on what we know and we know that "upsets" do occur and that "upsets" have the potential for affecting Humans and their environment.

- Using long-term average concentrations or emissions do not adequately allow us to quantitatively estimate the effects of "upsets."

BOTTOM LINES (CONTINUED)

- From past experience in Montana, we know that the highest concentrations of air pollutants in the air and in the soils occur within 5 miles of emission sources. In some instances, the highest concentrations were documented to occur within 1.5 miles.

- As a result of past experiences, major emitters many times purchase the land surrounding the sources so that "buffer" zones are created to protect against the economic consequences associated with human health and ecological effects.

- Hazardous waste incineration creates products of incomplete combustion which may be more complex than the original hazardous materials being burned. These chemicals may be more toxic than the parent compound.

- Only a small percentage of the PICs (products of incomplete combustion) in stack gases have been identified.

Chem-Fuel®

CADENCE CHEMICAL RESOURCES, INC.
Michigan City, IN

HAZARDOUS WASTE PROCESSING AND KILN RECYCLING NETWORK

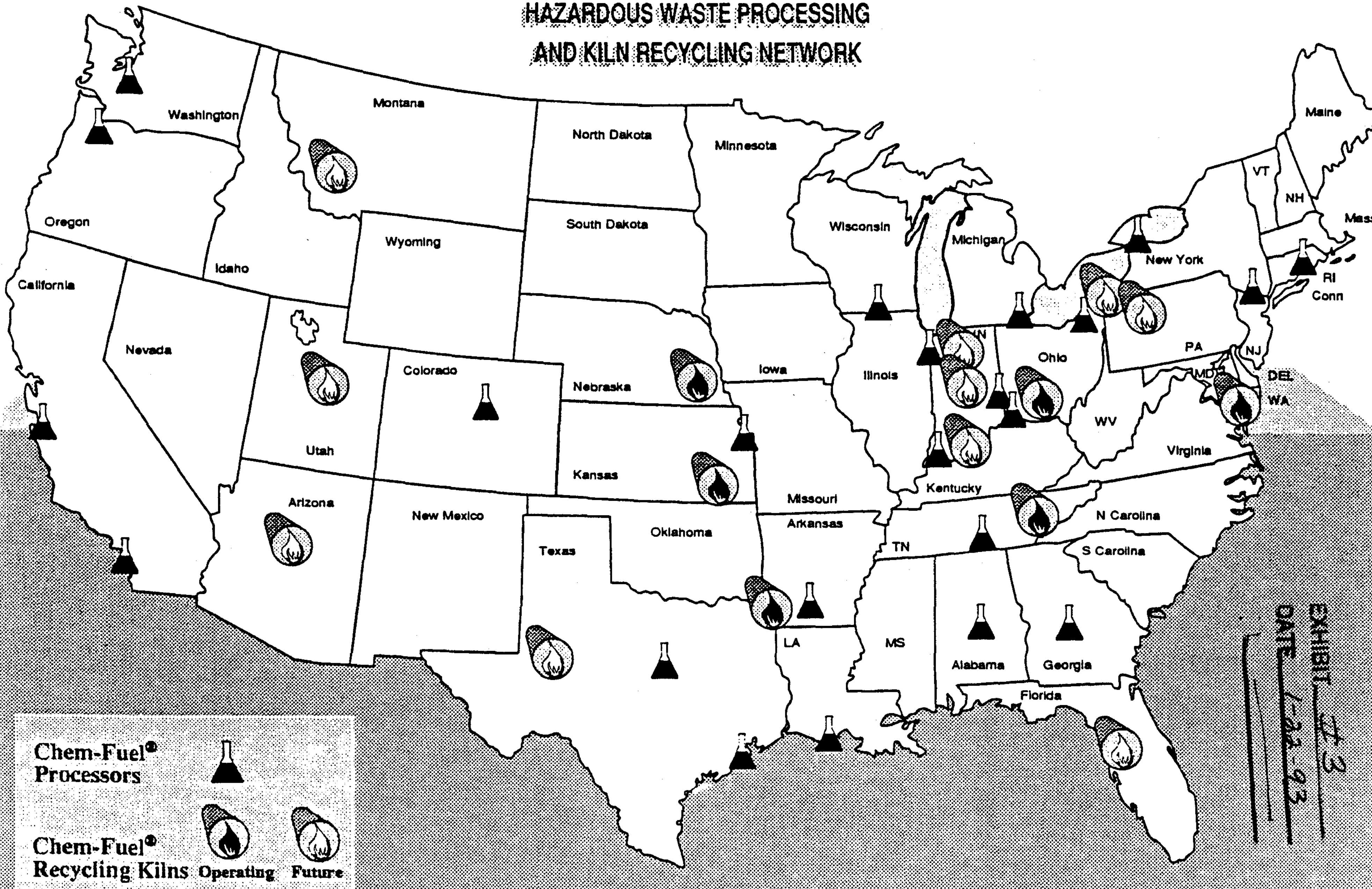


EXHIBIT #3
DATE 1-22-93

10/91

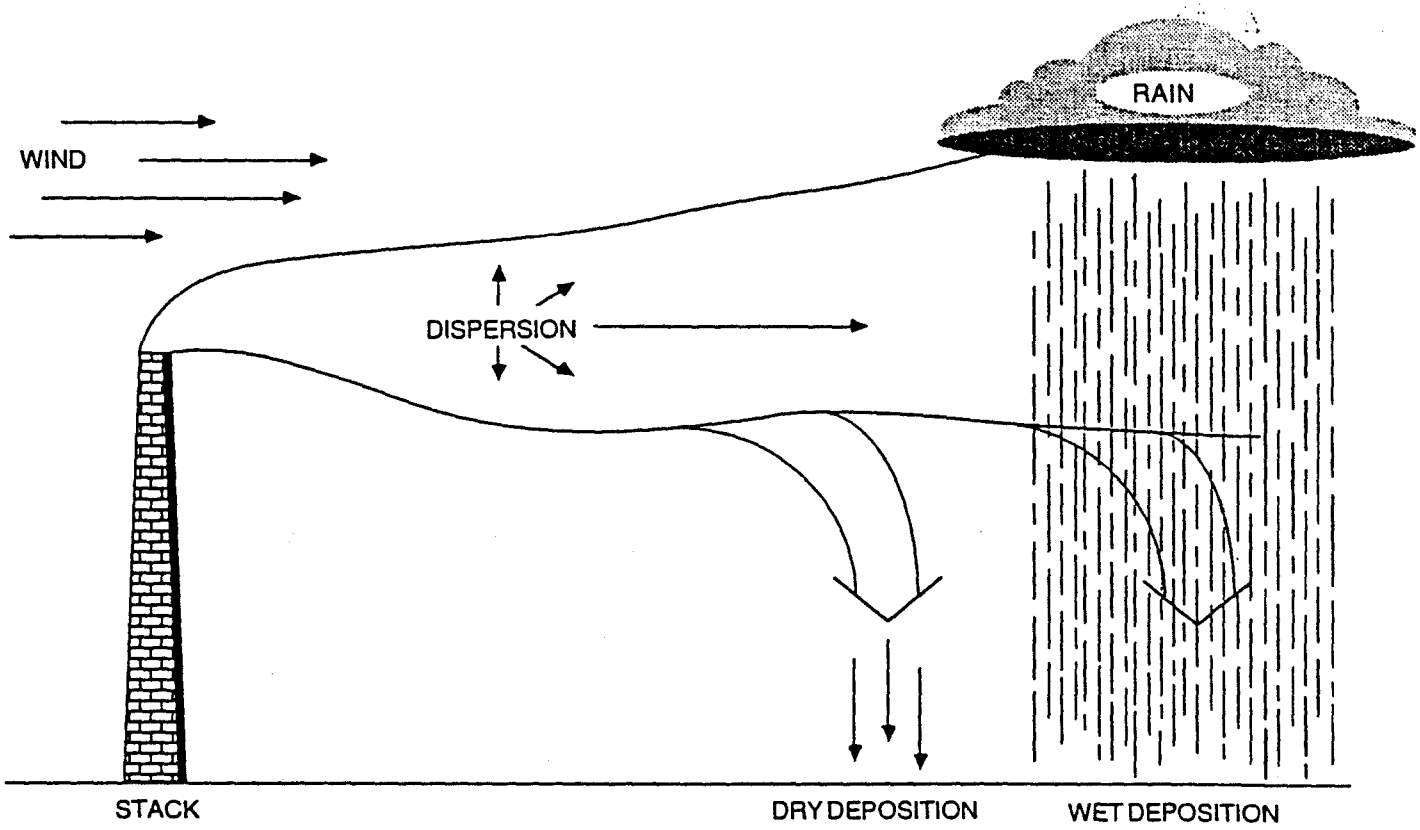


FIGURE 8.1 Modes of Dispersion and Deposition for Facility Stack Emissions.

DEPOSITION FALLOUT IN MONTANA

EXHIBIT #3
DATE 1-22-93

- Since the late 1800s, soils present in the vicinity of the Anaconda Smelter have been accumulating heavy metals from smelter stack emissions.

- Studies conducted in the Deer Lodge Valley agree that in general, concentrations of arsenic, cadmium, copper, lead, and zinc generally decrease with increasing distance from the Anaconda smelter stack.

- The highest arsenic concentrations are within a 2-mile radius of the smelter complex

- Taskey (1972) sampled arsenic, copper, lead, and zinc in the soils near Anaconda and reported that the highest concentrations were generally within 5 miles of the Old Works and Washoe Smelter sites. The highest concentrations measured were near the sources.

- Munshower (1972) studied the ecological dynamics of cadmium cycling at grassland sites in the Deer Lodge Valley. Fifty-three sampling sites were established in the area. Munshower (1972) reported that concentrations decreased as a function of distance from the smelter. Within 1.5 miles of the smelter complex, the cadmium content was 30 ppb. The concentrations decreased to 3 ppb at approximately seven miles from the smelter.

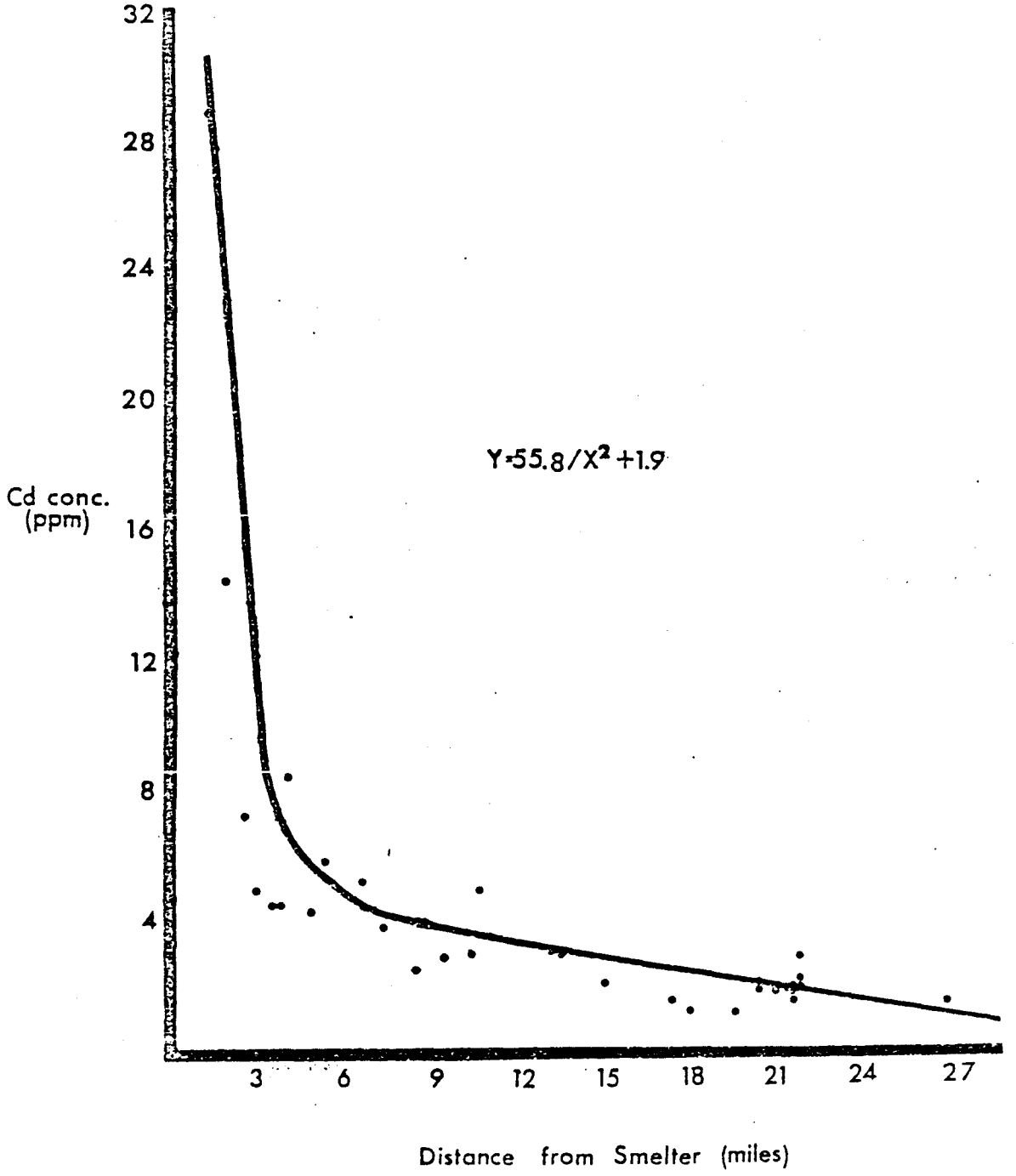


Figure 6. Soil Cd distribution curve

EQUIVALENCY OF DOSE HYPOTHESIS

A.S.L.
& associates
helena, montana

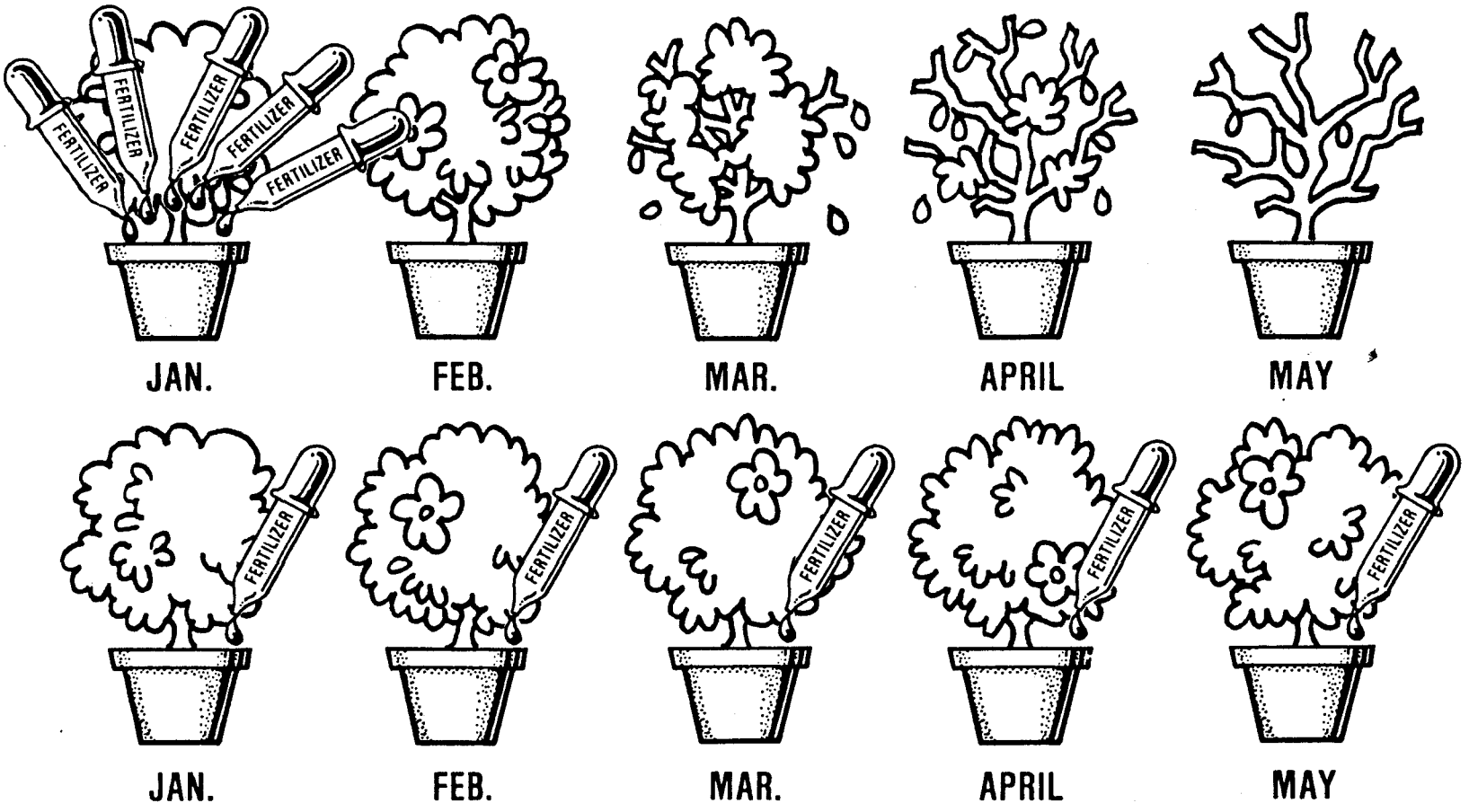
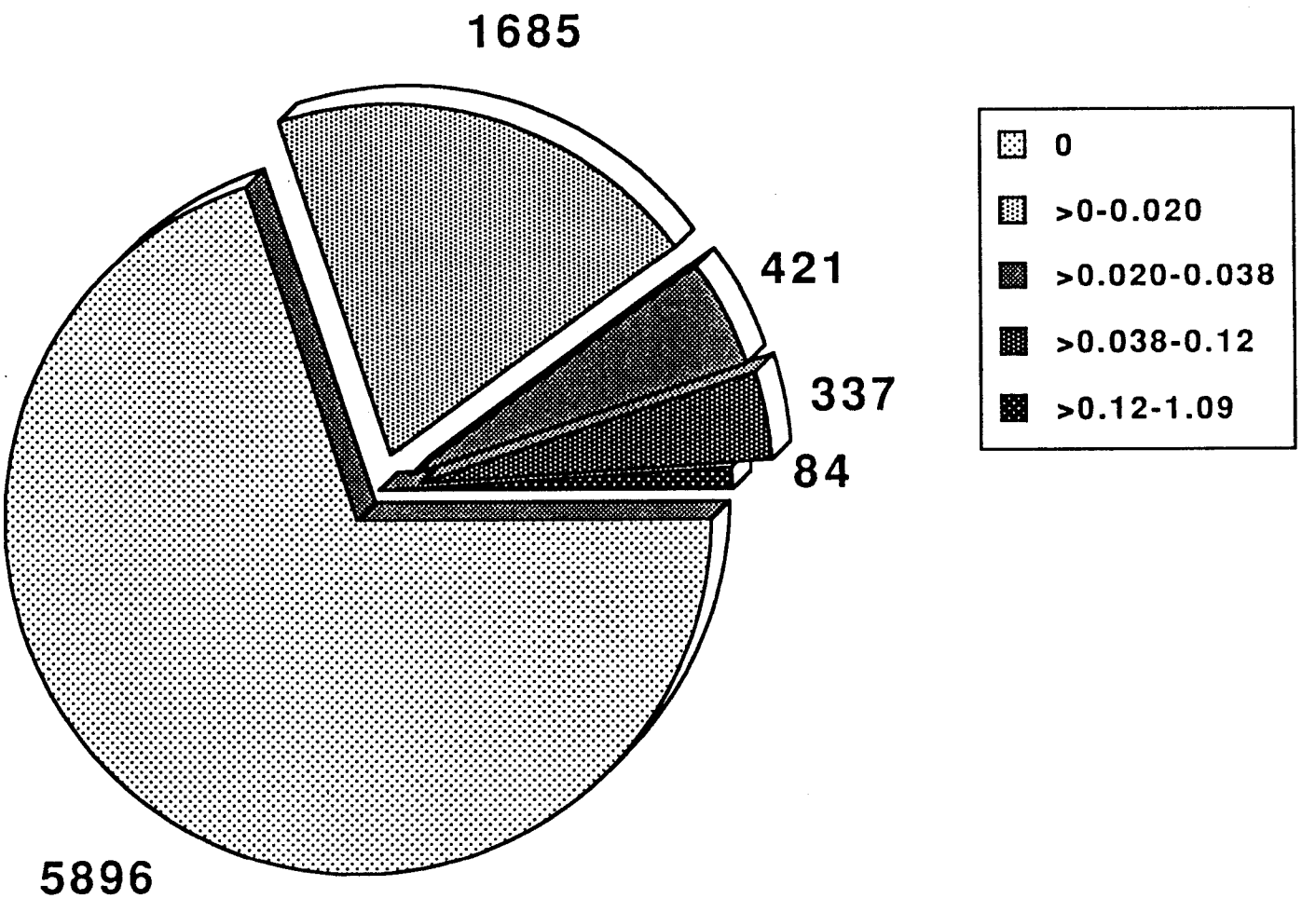


EXHIBIT #3
DATE 1-22-93

JEFFERSON COUNTY, MONTANA
SULFUR DIOXIDE
1987



METAL EMISSIONS FROM CEMENT KILNS

EXHIBIT #3
DATE 1-22-93

ANTIMONY†

ARSENIC*

BARIUM†

BERYLLIUM*

CADMIUM*

CHROMIUM*

LEAD†

MERCURY†

NICKEL

SELENIUM

SILVER†

THALLIUM†

VANADIUM

ZINC

*REGULATED AS CARCINOGENS (CHROMIUM AS HEXAVALENT).

†REGULATED AS NONCARCINOGENS.

SUMMARY OF POTENTIAL HEALTH EFFECTS:

"THE FOREGOING REVIEW OF CURRENT LITERATURE ON THE HEALTH EFFECTS OF EMISSIONS, CKD, AND CEMENT FROM **PROPERLY OPERATED** CEMENT PRODUCTION FACILITIES USING HAZARDOUS WASTE FUEL AND IN COMPLIANCE WITH REGULATORY REQUIREMENTS INDICATES MINIMAL POTENTIAL FOR ADVERSE EFFECTS TO HUMAN HEALTH. IN FACT, THE POTENTIAL HEALTH EFFECTS FROM KILNS SUPPLEMENTING FUEL WITH HAZARDOUS WASTE **ARE NOT EXPECTED** TO BE DIFFERENT FROM THOSE THAT COULD BE ENCOUNTERED FROM BURNING CONVENTIONAL FUEL ALONE." (PAGE 70).

SOURCE: MANTUS, E.K., ET AL. 1992. ALL FIRED UP: BURNING HAZARDOUS WASTE IN CEMENT KILNS. ENVIRONMENTAL TOXICOLOGY INTERNATIONAL, SEATTLE, WASHINGTON.

EXHIBIT #3
DATE 1-22-93

POTENTIAL PROBLEMS

- HAZARDOUS WASTE INCINERATORS CREATE PRODUCTS OF INCOMPLETE COMBUSION WHICH MAY BE MORE COMPLEX THAN THE ORIGINAL HAZARDOUS MATERIALS BEING BURNED. THESE CHEMICALS MAY BE MORE TOXIC THAN THE PARENT COMPOUND.

- ONLY 1-10% OF THE PIC's KNOWN TO BE IN STACK GASES HAVE BEEN IDENTIFIED.

- "UPSETS" CAN CAUSE MASSIVE EMISSIONS OF UNCOMBUSTED MATERIALS INTO THE AIR.

- HEAVY METALS ARE NOT DESTROYED OR DETOXIFIED. THEY ARE REDISTRIBUTED IN THE WASTE THROUGH AIR EMISSIONS, FLY ASH, DUST AND CONCRETE PRODUCTS.

- CHLORINATED DIOXIN AND DIBENZO-FURANS MAY BE EMITTED.

- ACCIDENTAL SPILLS OR FIRES MAY RELEASE TOXIC MATERIAL INTO THE ENVIRONMENT.

*Private Property Rights
*Land Use Planning
*Affordable Housing

*Development Costs
*Simplify Review Process
*Accountable Review Authorities

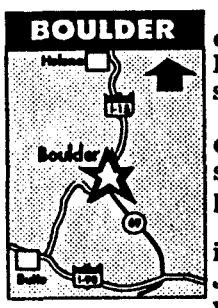
SENATE NATURAL RESOURCES
EXHIBIT NO. 3A
DATE 1/22/93
BILL NO. —

7A 1/28/93 Independent Record

Jeff Co commission to approve Helena area land division

The Jefferson County Commission indicated Wednesday it would approve a subdivision request by a Helena couple on property just south of Lewis and Clark County in the Crossfire area.

John and Dawn Betts had purchased two 20-acre tracks on flat land along Holmes Gulch Road in 1985, intending to build their home there.



John Betts told commissioners their son is handicapped and must receive assistance available in Lewis and Clark County but not in Jefferson County, so the couple abandoned plans to move.

Betts transferred one of the parcels to his wife in early 1992 as part of an estate plan, and in October split the parcel he retained in two and sold each part.

In December Dawn Betts tried to split her parcel in two for sale, but the change was denied by the Jefferson County clerk and recorder as being in violation of subdivision rules.

Attorney Gary Davis, representing Betts, told the commissioners the smallest parcel would be eight acres, compared to other one-acre parcels in the neighborhood. He said the split would not add to the commission's fears of extensive subdivisions causing problems with traffic and sanitation in rural areas.

Davis said the area's roads are built to county standards, electric and telephone lines are in place, and Betts has obtained approval for septic systems on the land.

Betts assured the commission he owned no other parcels in the area and was not a subdivider.

Commission Chairman Dave Anderson noted the commission had approved a similar request in 1992, with the provision that the property not be further subdivided for a period of years.

Betts agreed to the condition, and Anderson said the commission would approve the exception to the rules as soon as Davis and County Attorney Richard Llewellyn came up with the proper form of deed restriction.

1/19/93

Friends are trying to dictate city policy

The Friends of Mount Helena carried on a full blown campaign to "take" private property from Dal and Jane Smilie. Our city commission followed the Friends' advice and denied access; access the city staff stated was within city code and was similar or better than that always granted in the past.

The Friends have the ability to order policy in our city, who are they? Their president admits that they are a "non-membership" association. They consist of a board of seven elected by itself and accountable to itself only. One of the seven is reported to have lived in Alaska for two years while on the board. When asked by the Smiles, the president wouldn't even give the names of the board. Sounds like the vigilantes of the politically correct. I wonder if they have secret handshakes.

The city commission is meeting with the Friends at 4 p.m. on Jan. 21, at the City-County Building to consider what to do with private land in Helena. The Friends have expanded their mission to include defending the "public interest" in other people's hillside lots, "ancient" lots and lots near any park. Their stated concerns include land above Goldrush, Le Grande Canyon, Rodney and Beattie.

They don't want any of this land built on. Isn't it more environmentally sound to build on city lots rather than to push residents onto 20 acre wilderness tracts?

The Smilies were only the first to lose their land and their savings. If you have invested in vacant lots in much of Helena you are next. You need to be at that meeting. You better bring your attorney.

Why do our city elected officials and staff allow a small group of unelected and self-appointed radicals to set policy and take property?

Thomas M. Gustin
517 State

SENATE NATURAL RESOURCES
EXHIBIT NO. 4
DATE 1/27
BILL NO.

Lorretta Lynde.....**PUBLISHER**
Charles Wood....**EDITOR**
Mike Voeller.....**EDITORIAL PAGE EDITOR**

Revamp subdivision laws

AN IR VIEW

When lawmakers passed Montana's subdivision law 20 years ago they included a provision that allowed developers to divide their property into parcels of 20 acres or larger without government review.

The law also provides that owners can slice off smaller tracts once a year and sell those as "occasional sales" without any review by local government. And owners can sell off parcels to family members without approval.

Twenty years ago legislators probably thought that not many people would want to buy a 20-acre tract of land, but that certainly hasn't been the case.

Speculators with a lot of cash have bought ranches or large pieces of land, divided them into 20-acre tracts and sold them off without giving any thought to access, water or public health and safety.

Local governments then have the headache of trying to provide school transportation, fire and law enforcement protection, etc.

Unplanned developments have caused major headaches throughout Montana, particularly in areas surrounding Bozeman, Kalispell and south of Missoula.

Gallatin County Road Superintendent Sam Gianfrancisco said unreviewed subdivisions have cost the county $300,000 over the last five years for establishing and maintaining new access roads.

According to county figures, 108,424 acres of land in Gallatin County has been divided without any review since 1973.

Rep. Bob Gilbert, R-Sidney, who has been pushing for eight years to reform Montana's subdivision laws, almost got the job done in 1991, but it lost in the Senate by two votes after a furious lobbying effort by opponents.

Gilbert will again sponsor subdivision legislation during the current session. Sen. Steve Doherty, D-Great Falls, Rep. Emily Swanson, D-Bozeman and Rep. Russell Fagg, R-Billings, also plan to propose subdivision reform bills.

We hope the legislators can agree on one bill, and we think that probably should be Gilbert's because he has devoted so much time to the issue and has worked hard with all of those who have an interest in subdivision regulation.

Under Gilbert's bill, all land divisions of less than 160 acres would be subject to subdivision review.

Minor subdivisions (five lots or fewer under current law) would have to be approved or denied within 35 days of the application. Major subdivisions would be settled within 60 days of filing. Under current law, creation of subdivisions can drag on for years.

Of course, there is much more to Gilbert's bill. In discussing it with him, we feel Gilbert is on the right track and that his bill will provide for good, sound subdivisions. It will put some pressure on big speculators, but they have to be accountable. They shouldn't be allowed to make a conscious decision to avoid review, as is currently the case.

SENATE NATURAL RESOURCES
EXHIBIT NO. 5
DATE 1/22
BILL NO. —

DATE 1/22

SENATE COMMITTEE ON Natural Resources

BILLS BEING HEARD TODAY: ——————

Name	Representing	Bill No.	Check One Support	Oppose
Allen S Lefohn	self			
Brady Wiseman	MAIP			
Ron Erickson	self			
Nancy Erickson	self			
Jim Hayne	Self			
Jackie Girlus Forba	self			
DAN STAHLY, Dwight Welch	MontPIRG			
RICK GUSTINE	MARLS			
DAN McGEE	MARLS			
Esther G Bengtson	Realtors			
Jake Korell	Realtors			
Gene Stumvoll	Realtor			
BILL SPILKER	"			
Linda Lee	MontPIRG			
Steve Mandeville	MAR			

VISITOR REGISTER

PLEASE LEAVE PREPARED STATEMENT WITH COMMITTEE SECRETARY

F10