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OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

Subject: The Monsanto Investigation

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To: David Bussard, Director
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This is an analysis of the failure of EPA to investigate allegations that the Monsanto Company had falsified scientific studies on the carcinogenicity of dioxin.

Background and summary

Dioxins are highly toxic unwanted byproducts of certain industrial operations including the manufacture of some pesticides. Dioxins are unintentionally created in chemical manufacturing processes when chlorine combines with other chemicals at high temperatures.

Agent Orange, a defoliant widely used during the Viet Nam war by the United States to eradicate jungle hiding places of the Viet Cong, contained trace amounts of dioxin. Since dioxin was known to cause cancer and birth defects in some animals, veterans, who had contracted cancer and who had been in areas sprayed with Agent Orange, attempted to obtain compensation from the Veterans Administration and from the manufacturers of Agent Orange. These manufacturers included Monsanto, Dow, Uniroyal and Diamond Shamrock.

Since the chemical manufacturers were aware of the presence and toxicity of dioxin in Agent Orange and since the presence of dioxin could have been greatly reduced by more careful production techniques, a successful lawsuit by the veterans could have bankrupted some of the world's largest chemical manufacturing companies, just as a similar problem with asbestos had bankrupted the giant Johns Manville Corporation some years ago.

However, the veterans won very little from the Veterans Administration and less from their lawsuits against the manufacturers. Their principal problem was the insufficient scientific data showing that dioxin caused cancer in humans. Even more damaging to their suit was the fact that, of the few studies of *human*

exposure to dioxin in existence at the time, the ones where there were the greatest exposure to dioxin showed no significant increase in cancer. These included Monsanto sponsored studies of Monsanto workers inadvertently exposed to dioxin.

Because of the sparsity of positive human data and the existence of the negative Monsanto data, the veterans, in 1984, had to accept a token "nuisance value" settlement. Eventually, scientific studies came to light which unambiguously identified dioxin as a human carcinogen, but it was too late for the veterans as the courts had closed the door on any further settlements.

In February 1990, Dr. Cate Jenkins, a chemist at the U.S. Environmental Protection Agency, wrote to the EPA Science Advisory Board that there was evidence that the Monsanto studies were fraudulently done and that if the studies had been done correctly, they would have shown the connection between dioxin and cancer in humans. This accusation received considerable press attention. In August, 1990 EPA decided to launch a criminal investigation of Monsanto.¹

Amid a furor of publicity and cries of foul and intensive lobbying by Monsanto the criminal investigation went on for two years. However, despite the government's assurances that it would "investigate any allegations of fraud and, if appropriate, evaluate the full range of enforcement options" it did nothing of the kind. Instead it investigated and illegally harassed the whistleblower, Cate Jenkins.

In August of 1992, EPA quietly closed the criminal investigation without ever determining or even attempting to determine if the Monsanto studies were valid or invalid, let alone fraudulent. However, the investigation itself and the basis for closing the investigation were fraudulent.

Jenkins' harassment was subsequently halted by order of the Secretary of Labor. The veterans were able to use her report to obtain increased Agent Orange benefits from Congress for Viet Nam cancer victims. Recent EPA reports say that there is now convincing human evidence of the carcinogenicity of dioxin, in contradiction to the Monsanto studies.

This investigation has left the unanswered question: did Monsanto manipulate their studies in order to play down the danger of dioxin so as to reduce their liability to the Viet Nam veterans? And it has raised two more questions. Are top EPA officials more concerned with protecting their employment prospects with the industries they regulate than in protecting human health and the environment? And, are EPA law enforcement officials being used as an internal KGB to silence dissent?

The Monsanto studies

The story starts in Nitro, West Virginia at a Monsanto chemical plant which was manufacturing the herbicide 2,4,5-T (the principal ingredient of Agent Orange, which contains traces of dioxin). In 1949, a runaway reaction at the plant caused an explosion releasing reaction material, resulting in many workers being doused with dioxin. In 1978, when concern about dioxin was on the rise and EPA was considering banning 2,4,5-T, Monsanto sponsored several studies of the long range health effects of the workers exposed to dioxin, both from the 1949 incident and from workers otherwise involved in 2,4,5-T production, comparing their health with the health of workers who were not exposed. These studies were published in medical and scientific journals between 1980 and 1984².

Publication of the first study, in 1980, coincided with a time when Monsanto was defending itself in three different legal actions relating to dioxin exposure from their products. Monsanto issued a press release headlined "Study Fails to Link 'Agent Orange' to Deaths of Industrial Workers". All of these studies showed no statistically significant increase in cancers among the exposed workers. Because of the high exposures, these studies contributed to the conclusion drawn in EPA and elsewhere that:

[T]he human evidence supporting an association between 2,3,7,8-TCDD [dioxin] and cancer is considered inadequate.³

Monsanto's studies would promote the idea that human beings, unlike other animals, are relatively immune to this man-made chemical.

Kemner v. Monsanto

The story moves next to Sturgeon, Missouri, 1979. A freight train derailment caused the spill of a tank car, containing 19,000 gallons of a Monsanto chlorophenol intermediate called OCP-crude, used in making wood preservatives and contaminated with dioxin. Frances Kemner and others exposed to the spill filed suit in Missouri state court in 1980 (Kemner et al v. Monsanto Company⁴). The trial lasted three years and eight months. At the end, the jury found for the plaintiffs with a most bizarre award; nominal awards as low as one dollar for actual damages and more than sixteen million dollars punitive damages! The jury did not believe the plaintiffs had proven that they had suffered any harm to date, but they were outraged at the egregious behavior of the Monsanto Company.

These are some of the allegations made by plaintiffs attorneys⁵:

- o Monsanto failed to notify and lied to its workers about the presence and danger of dioxin in its chlorophenol plant, so that it would not have to bear the expense of changing its manufacturing process or lose customers,
- o Monsanto knew how to make chlorophenol with significantly less dioxin content but did not do so until after the Sturgeon spill.
- o Monsanto knowingly dumped 30 to 40 pounds of dioxin a day into the Mississippi River between 1970 and 1977 which could enter the St. Louis food chain.
- o Monsanto lied to EPA that it had no knowledge that its plant effluent contained dioxin.
- o Monsanto secretly tested the corpses of people killed by accident in St. Louis for the presence of dioxin and found it in every case.
- o Lysol, a product made from Monsanto's Santophen, was contaminated with dioxin with Monsanto's knowledge. Lysol is recommended for cleaning babies' toys and for other cleaning activities involving human contact.
- o The manufacturer of Lysol was not told about the dioxin by Monsanto for fear of losing his business.
- o Other companies using Santophen, who specifically asked about the presence of dioxin, were lied to by Monsanto.
- o Monsanto was aware that dioxin contaminated their lawn care products (which were eventually banned by EPA).
- o Monsanto sold these and many other consumer products knowingly contaminated with dioxin without warning the public for over thirty years.
- o Shortly after a spill in the Monsanto chlorophenol plant, OSHA measured dioxin on the plant walls. Monsanto conducted its own measurements, which were higher than OSHA's, but they issued a press release to the public and they lied to OSHA and their workers saying they had failed to confirm OSHA's findings.
- o Exposed Monsanto workers were not told of the presence of dioxin and were not given protective clothing even though the company was aware of the dangers of dioxin.
- o Even though the Toxic Substances Control Act requires chemical companies to report the presence of hazardous substances in their products to EPA, Monsanto never gave notice and

lied to EPA in reports.

- o At one time Monsanto lied to EPA saying that it could not test its products for dioxin because dioxin was too toxic to handle in its labs.
- o At the trial a Monsanto executive argued that it did not report what it considered very low levels of dioxin to EPA because it would merely "add fuel to the media fires."

Of particular relevance to this report were the allegations that two of the Monsanto studies mentioned earlier, which showed no increase in cancer as a result of high levels of dioxin exposure, were fraudulent. At the time these studies were published, there was increasing concern about the carcinogenicity of dioxin as a result of animal tests. Plaintiff's attorney, however, argued that the data in the 1980 Zack and Gaffey and the 1985 Suskind and Hertzberg studies were finagled and if used correctly, would have shown a definite increase in cancers in the exposed workers. At one point, the plaintiffs-appellees' brief says:

Dr. Suskind was cross-examined and shown to be such a fraud that he refused to return to the State of Illinois for completion of his cross-examination.⁶

Such allegations were argued in front of a jury for more than three and a half years, the longest running trial in history at the time. Monsanto fought these charges with the best lawyers and expert witnesses that money could buy. They had to; the downside risk to Monsanto was enormous. If the plaintiffs in the Kemner case could collect damages, then every user of Lysol, Weed-B-Gone, and dozens of other consumer products using chemicals containing traces of dioxin might collect damages and put Monsanto and other chemical companies into bankruptcy.

In the end, Monsanto won the big issue. Since plaintiffs could not prove to the jury that they were harmed by the spill, the jury awarded them only nominal damages. Yet, despite Monsanto's parade of expert witnesses, the jury expressed its opinion of Monsanto's honesty and integrity by the unusual award of more than sixteen million dollars in punitive damages.

Plaintiffs lost on appeal on the technical legal ground that a punitive award could not be made in the absence of actual damages regardless of the facts in the case. Only one of the three appellate judges discussed the facts at all. He upheld the jury's opinion of Monsanto's behavior saying:

By finding for the plaintiffs, the jury found that the misconduct alleged had been proved, and such finding was eminently reasonable and based on the evidence.

It is not the purpose of this paper to re-examine this evidence. Given the time and effort that went into this trial, one is hardly likely to find a more thorough examination of these allegations into Monsanto's conduct.

Monsanto studies fraud allegations raised at EPA

Several years later, Cate Jenkins, a PhD chemist at EPA was working on a project to develop regulations to control hazardous waste originating in the wood preserving industry. While collecting data on damages caused by these wastes, her acquaintances at Greenpeace brought the 1979 Sturgeon, Missouri spill to her attention. This introduced her to the Kemner v Monsanto case along with its accusations of fraud in the Monsanto studies.

Jenkins was aware that in 1988, EPA had published a risk assessment of dioxin⁸. This assessment contrasted the Monsanto studies, which showed no human cancer, with other studies which did show cancers resulting from exposure to dioxin. The EPA risk assessment concluded that, in Jenkins' words, "the existing epidemiologic studies were conflicting, and did not provide definitive data on human health effects of dioxins, and thus EPA should continue to utilize animal toxicological data as a basis for dioxin assessments."⁹

Jenkins recognized that if the Monsanto studies were fraudulent, and were shown to be positive rather than negative, EPA would have concluded that there was human data, albeit limited, showing that dioxin causes cancer, rather than just animal data. This view was also held by Dr. William H. Farland, director of EPA's Office of Health and Environmental Assessment under whose jurisdiction the risk assessment was developed. He wrote in 1993:

In essence, the overall data base of human (epidemiologic) studies was considered [in 1988] to be "inadequate" for determining a cause and effect relationship between dioxin exposure and human cancer potential. If the [Monsanto] studies under discussion had been shown to be positive, the human data might have been considered "limited" for making such a determination.¹⁰

(EPA uses a weight of evidence classification system for carcinogens adopted from the International Agency for Research on Cancer (IARC). Carcinogens are classified into five groups based on decreasing weight of evidence: Group A, Human Carcinogens; Group B, Probable Human Carcinogens; Group C, Possible Human Carcinogens; Group D, Not Classifiable as to Human Carcinogenicity, and; Group E, Evidence of Non-Carcinogenicity for Humans. Group B is further divided into Group B1, for which there is limited human evidence of carcinogenicity, and B2 for which there is inadequate human evidence but sufficient animal evidence.¹¹ EPA's Office of

Health and Environmental Assessment had classified dioxin as Group B2. Jenkins and Farland believed that if the Monsanto studies had been positive, the classification would have been B1.)

EPA's classification of carcinogens is not just for internal EPA use, it is relied on throughout the world, in governmental, health care and legal circles, as one of the prime sources of this kind of information. In many situations, a substance is treated as a human carcinogen only if it is in Group A or B1, but not if it is in B2 or lower.

Because of the apparent conflicts in human data, the idea began circulating that dioxin is not the big problem with humans that it was previously thought to be based on animal studies. Dr. Jenkins was aware of this growing groundswell of opinion and saw its adverse effects in her regulatory work and in litigation concerning dioxin emissions in the pulp and paper industry. Thus, when she saw the Kemner brief, she immediately understood its significance, and on February 23, 1990, Jenkins sent a memorandum to the EPA Science Advisory Board entitled "Newly Revealed Fraud by Monsanto in an Epidemiological Study Used by EPA to Assess Human Health Effects from Dioxins", attaching a copy of part of the Kemner Plaintiffs-Appellees' brief dealing with the Monsanto studies. She requested that the Board or the EPA Office of Research and Development, audit the records of these studies to see if they were flawed.

Almost immediately, on March 9, 1990, Monsanto Vice President, James H. Senger, wrote to the chairman of the EPA Science Advisory Board complaining about Jenkins' memo and offering proof of its falsity. (He did not explain how Monsanto had obtained a copy of the memo.) His concern, however, was unnecessary since the day before, the Board had written to Jenkins, rejecting her request, informing her that they do not conduct study audits and forwarded her memo, without comment, to the National Institute for Occupational Safety and Health (NIOSH) and the EPA Office of Toxic Substances.

Within a few weeks, the story began appearing in the press. On April 6, Newsday ran a story headlined "EPA Questions Dioxin-Cancer Study". The Charleston Gazette of March 23 carried the headline "Key dioxin study a fraud, EPA says". This last brought a letter from the CEO of Monsanto to EPA Administrator William Reilly¹² calling for the Agency to publicly announce that Jenkins does not speak for EPA. EPA complied and in a letter to Monsanto's CEO, EPA Assistant Administrator Don Clay expressed his regrets for "any problems that Monsanto may have had as a result of the news medias's use of this memorandum."¹³

Veterans organizations reading the story, recognized its significance to the Agent Orange controversy. The Veterans Administra-

tion does not generally accept animal data in determining veterans benefits from exposure to carcinogens. The VA's position, stated in the *Federal Register*, is that the:

... VA does not believe it would be appropriate to adopt the IARC model, especially those portions which would apply "in the absence of adequate human data."¹⁴

Thus, the difference between the B1 and B2 classification of the Monsanto studies meant the denial of VA benefits to thousands of Viet Nam veterans and their dependents.

Criminal investigation of Monsanto

In March, 1990 the EPA Office of Criminal Enforcement (OCE) also began to look into the criminal aspect of the fraud charges. In July, 1990, OCE instructed the Office of Criminal Investigation (OCI) to evaluate the material to see if a criminal investigation was warranted. A seven page response from OCI, written August 8, 1990 was very positive and recommended "a full field criminal investigation". The summary of allegations repeated just about everything in the Kemner brief. Potential criminal violations of three laws were cited; (1) the Toxic Substances Control Act (TSCA) which requires persons to report any substantial risk of their products to EPA and provides criminal penalties for knowing violation (15 USC 2615(b)), (2) conspiracy to defraud the United States (18 USC 371), and (3) making a false statement on a matter within the jurisdiction of any agency of the United States (18 USC 1001).

On August 20, 1990, the criminal investigation was officially opened. The case "Opening Statement" concentrated on the charges of fraud in the Zack and Suskind study, though all other charges in the Kemner brief were included. Running the investigation was John West, Special Agent in Charge, Office of Criminal Investigations assisted by Special Agent Kevin Guarino, both out of the Denver office. Completion was anticipated by March, 1991.

Two days later, OCI informed OCE¹⁵ that they had opened the investigation, saying:

Information in the plaintiffs brief indicates a potential conspiracy, between Monsanto and its officers and employees, exists or has existed to defraud the US EPA, in violation of 18 USC 371. The means of conspiracy appears to be by (1) providing misleading information to the EPA; (2) intentional failure by Monsanto to fully disclose all pertinent TSCA related information to the EPA; (3) false statements in notices and reports to EPA; (4) the use of allegedly fraudulent research to erroneously convince the EPA, and the scientific commu-

nity, that Dioxin is less harmful to health and the environment.

The enthusiasm shown in these first three documents from OCI is short lived. One gets the impression, on reviewing the record, that as soon as the criminal investigation began, a whole bunch of wet blankets were thrown over it. Almost nothing appears in the record about the first three charges once the investigation began. The investigation concentrated on criminal fraud in the Monsanto studies.

It is interesting to note that Jenkins never asked for a criminal investigation. She only requested a scientific audit of the Monsanto papers. Although she alleged fraud, which in legal terms is a criminal offence, not being a lawyer, she probably used the word in the common English sense of "cheating". It makes no sense at all to conduct a criminal investigation of allegedly fraudulent studies right off the bat. The logical steps are:

step 1) A scientific investigation to see if the studies are flawed. If so, then step 2.

step 2) A scientific investigation to see if the studies would have yielded positive results if the data were used correctly. If so, then step 3.

step 3) Scientific peers judge if it is "more likely than not" that the kinds of errors found could be honest mistakes made by competent professionals. I.e. whether the studies are fraudulent in the "English" sense.

The decision of the Office of Criminal Enforcement to go right to a criminal investigation without having gone through these steps would prove to be a major stumbling block to the investigation. Its like trying to make tiger stew without first catching a tiger. The record shows repeated attempts by the OCE to get the Science Advisory Board or the Office of Research and Development involved, to no avail. None of the scientific groups in EPA, it seems, wanted to touch this hot potato, and no one in position of authority was instructing them to do so.

Another wet blanket was the five year federal statute of limitations. The record is replete with concerns that the statute of limitations may have expired and the need to see if Monsanto had submitted these studies to the Agency in the last five years. For example, the August 8, 1990 memo says:

One important issue in proving a criminal case is to determine what Monsanto has reported to the EPA during the last five years in regards to dioxin.

Nevertheless, there is nothing in the detectives' reports of investigation or their monthly status reports to indicate that any attempt was made to look for such submissions, even though, as we will see later, they do exist.

Still another self-imposed impediment to the investigation was the fact that almost as soon as the investigation began, the investigators limited themselves to looking at only how the Monsanto studies may have affected EPA regulations. There is nothing in the statutes which says that providing misinformation to the government or conspiring to defraud the government applies only to regulations. To prove criminal fraud, given that cheating has been established, it is only necessary to show that the U.S. Government (not only EPA) relied on these studies in some substantial way (not just for regulations) and that Monsanto tried to convince the U.S. Government to do so.

A clue to the timing of this investigative reversal is provided in the Monthly Status Report for September, 1990. The report says:

During the week of September 17th, [West/Guarino?] met with the following EPA Headquarters personnel regarding this matter:

Though the names were struck out, the document lists two enforcement attorneys, two persons from the Office of Compliance Monitoring of the Office of Toxic Substances, one person from the Inspector General's Office, and one from the Office of Solid Waste (OSW, Dr. Jenkins' office). Although a record must have been made of these interviews, none accompanied the FOIA response, leaving one to speculate about what may have transpired.

Following that, the status report says the investigators tried to set up a meeting with [Jenkins?] but were unable to. Dr. Jenkins says¹⁶ that she got a phone call from either West or Guarino trying to set up a meeting after office hours on her own time. She found this request rather strange and insisted that any interview would have to be on official time. This incident along with the other "mood" changes referred to above, gives one a clue as to what may have transpired during those meetings on the week of September 17th.

First, it is reasonable to assume that the persons from the Office of Compliance Monitoring told the investigators that the charges relating to violations of TSCA were in the jurisdiction of the Office of Toxic Substances and were under investigation by them¹⁷. This may be why the investigators only looked at the charges relating to fraudulent studies.

Second, the attorneys from the Office of Enforcement, one of whom was with the Toxics Litigation Division, may have emphasized the

statute of limitation problems and they may have given the investigators the idea that only the influence on regulatory matters was relevant. This speculation is based on a memo written by [Michael J. Walker?, Director,] Toxics Litigation Division about the Monsanto studies¹⁸ which says:

The study may be 30 [sic] years old. This may preclude EPA taking action under existing statutes unless the study has been "presented" in the context of some request for regulatory action.

(The memo adds the cryptic note that "If there is a criminal case being developed, we need to ensure that contacts are limited.")

And lastly, one can guess that the person from OSW (probably Jenkins' supervisor, Michael Petruska, or his supervisor, David Bussard) must have told the investigators that Dr. Jenkins has a reputation as a troublemaker and whistleblower and that her memo to the Science Advisory Board was not part of her assigned duties and that he would not want her spending official time on this investigation.

During this time, Monsanto continued its campaign against Jenkins. In October, an angry Monsanto vice president wrote to Assistant Administrator Don Clay¹⁹ (to whom the Office of Solid Waste reported):

The gross inaccuracy of these charges have been the subject of prior correspondence to the Agency by myself and by Monsanto's Chairman, Richard Mahoney. Notwithstanding our efforts to correct the record, these baseless charges have been widely repeated in newspaper accounts and even before a Congressional Subcommittee where the charges are portrayed as fact, thus giving the incorrect impression that it is the government's view that the studies are misleading.²⁰

This too may have been part of the education the two detectives from Denver received at EPA headquarters in Washington. If this speculation is correct, then it would certainly account for their change in attitude.

In any event, when West and Guarino finally got around to interviewing Dr. Jenkins (on official time) on November 14, they were just going through the motions. They pointed out the difficulties at every turn but did not follow up on any offers of Jenkins to supply information to overcome the difficulties. For example, she offered them the transcript of Kemner plaintiff's attorney Rex Carr's cross examination of Monsanto's expert witnesses which convinced a jury of Monsanto's guilt, but they weren't interested. At the end of the interview, Jenkins, concerned at their lack of enthusiasm, told them that their investigation would be

closely watched by Congress and veterans groups.²¹

Still concerned, Jenkins sent a follow-up memorandum to West and Guarino the next day. The subject was: "Criminal Investigation of Monsanto Corporation ...".²² It began:

You said that pursuing a criminal prosecution against Monsanto would require a prior determination of the significance of the fraud. In order for proceedings to be initiated by EPA, the fraud would need to have affected the regulatory process at EPA, and Monsanto would need to have knowing[ly] submitted the falsified data and health studies to EPA in order to affect the regulatory process.

The memo then proceeded to outline information which satisfies that need and offered to make the supporting documents available.

Although Jenkins says she was not responsible for the leaking of her earlier memo²³, she made sure that this one received wide distribution by formally copying it to veterans groups, members of Congress, and environmental organizations, in order to shore up a sagging investigation. This was the first public announcement that Monsanto was under criminal investigation. On November 17, Jenkins accepted an award from the National Viet Nam Veterans Coalition where she also revealed the fact that EPA was conducting a criminal investigation of Monsanto.

Dr. Jenkins' memo and speech did indeed generate publicity. Although it was her wish that the public attention would put some backbone into the investigation, it had just the opposite result. The law enforcement officials were horrified that anyone would reveal the existence of a criminal investigation. Such behavior was contrary to the entire ethic of the law enforcement community where secrecy is a way of life.

Dr. Jenkins was unaware of this concern until she received a phone call from Special Agent Guarino on November 20, asking her to refrain from revealing the that there was an ongoing criminal investigation. She told him it was too late, "the cat's already out of the bag ... you should have told me this when we first talked."²⁴

Apparently Guarino and West must have been under some heat from their management for the Jenkins revelations. Being unaware that Jenkins had tape recorded both the interview and the phone call, they falsified their Monthly Status Report for November, 1990, saying that they had advised Jenkins on November 14th "not to disclose, to the public, the existence of an ongoing criminal investigation" and that she had proceeded to distribute her memorandum of November 15th to the public after she had been requested not to do so. The report also says that "this matter

has been brought to the attention of the Office of Enforcement." Thus agents West and Guarino may have committed a felony by knowingly making a false statement on a matter within the jurisdiction of the United States (47 USC 1001) and may have violated EPA ethics standards by making false and malicious statements about a fellow employee. After this EPA's enforcement interest focused on Jenkins rather than Monsanto, as shall be seen later.

Meanwhile, towards the end of 1990, things were heating up. Greenpeace issued a detailed 44 page critique of the Monsanto studies by Joe Thornton entitled "Science for Sale"²⁵ which repeated Jenkins' allegations and added several more, followed by a petition to EPA to investigate the studies, and held a well publicized press conference. The Washington Post reported that: "The EPA said yesterday it is looking into Greenpeace's charges."²⁶

The Environmental and Natural Resources Division of the Department of Justice notified the EPA Inspector General that an "employee may have improperly disclosed confidential government investigatory information".²⁷ This was probably responsible for the investigation of Jenkins launched by the Inspector General.²⁸

The law firm which represented the Viet Nam veterans in their class action suit against Monsanto wrote to the judge to re-open the suit based on Jenkins' memo.²⁹

Office of Enforcement representatives were called to brief House and Senate staffs on the criminal investigation of Monsanto. They assured the staffs of EPA's commitment to look into Jenkins' allegations, a commitment which turned to be false. EPA also assured them that they would not harass Dr. Jenkins, which also turned out to be untrue.³⁰

EPA Assistant Administrator Don Clay (who had previously apologized to Monsanto for Jenkins' memo) accepted Monsanto's invitation to appear on the program for their annual Environmental Meeting in St. Louis although he said that on advice of counsel, he could not discuss dioxin or any "personnel issues".³¹

On January 24, 1991, Jenkins wrote another memorandum³² to West and Guarino in response to a newspaper article. In it she said:

[T]his should correct certain misinformation being disseminated by an unidentified EPA official ... claiming that even if the Monsanto human studies on dioxins effects were fraudulent, this had no impact on protecting the public. ... This is not true. This memorandum outlines the direct changes in the environmental regulations, as well as compensation by the government and court systems, that would result if dioxins were clas-

sified as human, not just animal, carcinogens. The Monsanto studies subject to your investigation have played a major role in preventing the classification of dioxins as human carcinogens,

Dr. Jenkins then proceeded to give a ten page factual summary, extensively footnoted, supporting her assertions of the importance of the dioxin classification. But the only interest shown in her memo by the investigators in the Monthly Status Report for February, 1991, was that "a number of individuals and organizations outside of EPA were sent copies. [John West?] and EPA Headquarters, Office of Enforcement, were informed of this matter." They reported no other relevant activity for several months.

However, there was considerable related activity elsewhere in EPA. The Inspector General was apparently investigating whether Jenkins had violated any EPA rules in divulging the fact that there was an ongoing criminal investigation (even though nothing was happening in that investigation). The Office of Enforcement was working on a new agency policy to prevent such disclosures in the future.³³ And a Work Group had been set up to respond to the Greenpeace petition.

The Greenpeace petition was denied³⁴ on technical grounds, but EPA Administrator William Reilly tried to smooth over hard feelings by writing a personal letter to Greenpeace's Pat Costner with a hand written note at the bottom saying: "We want to keep the lines of communication open. Best regards".³⁵ However a different view of EPA's interest was revealed in a document never intended for public eyes. It was the Greenpeace petition Work Group's outline of the issues, which was inadvertently left in the docket.³⁶ The last line says:

How can we respond appropriately to the petition from a legal and substantive standpoint and not unnecessarily contribute to the Greenpeace publicity campaign?

Although EPA denied Greenpeace's petition it nevertheless assured the public in the *Federal Register* that:

As a matter of Policy, EPA does investigate allegations of false statements and/or misrepresentation, and if appropriate, will evaluate the full range of enforcement options available to address legitimate charges of misconduct.

These bold words notwithstanding, the investigation into Monsanto's alleged false statements and/or misrepresentations was going nowhere. The only action reported for March was a contact with someone in Dr. Jenkins' division about "the release of information concerning this criminal investigation to outside

sources by [Dr. Jenkins?]."³⁷

Things appeared to pick up in April. The Monthly Status Report said that [Dr. Hugh McKinnon?] of EPA Headquarters would be assigned to lend Technical assistance in this investigation. Dr. McKinnon is an epidemiologist and director of the Human Health Assessment Group within the Office of Health and Environmental Assessment. This is the first indication on the record of any scientific input to the investigation. As mentioned earlier, the investigation of criminal fraud is meaningless until there is first a scientific determination that the studies are flawed.

The appearance that an investigation might finally be getting under way, however, was an illusion. There is no subsequent mention of Dr. McKinnon. In fact there is no investigative activity reported at all from May of 1991 until May of 1992. Lack of activity was later explained as being "due to organizational changes and transfers during this period"³⁸.

While no one in the scientific community was willing to tell the investigators on the record whether the studies were flawed, apparently they were not so reluctant to talk to Science magazine. A February, 1991, article by Leslie Roberts³⁹ says;

Everyone Science spoke to who is familiar with the Monsanto studies agrees that they are flawed, but probably not as a result of criminal intent.

Among the people interviewed by Ms. Roberts and presumably included in "everyone Science spoke to ..." are:

Dr. Michael Gallo, Robin Wood Johnson Medical School

Dr. Linda Birnbaum, Director of EPA's Environmental Toxicology Division of the Health Effects Research Laboratory

Dr. George Lucier, Chief, Laboratory of Biological Risk Analysis, National Institute of Environmental Health Sciences

Dr. Ellen Silbergeld, University of Maryland

Dr. Michael Gough, Program Manager, Biological and Behavioral Sciences, Congressional Office of Technology Assessment

Dr. Maryilyn Fingerhut, Chief, Industrywide Studies Branch, National Institute for Occupational Safety and Health

Dr. William H. Farland, Director of EPA's Office of Health and Environmental Assessment

Dr. Donald Barnes, Director, EPA Science Advisory Board

Dr. Eric Bretthauer, EPA Assistant Administrator for Research and Development.

While it is possible that not every scientist mentioned was "familiar with the Monsanto studies", certainly most were.

Nevertheless, Monsanto continued to argue the correctness of its studies and to vilify Dr. Jenkins. In April, 1991, James Moore, an attorney for Monsanto, formerly with EPA⁴⁰, wrote to the EPA Assistant Administrator for Enforcement, Raymond Ludwiszewski⁴¹, complaining that:

[T]his investigation has become a media event through the unprofessional efforts of a single EPA employee ... The agency has been unsuccessful in halting this improper conduct, despite the clear impropriety and the fact that such information releases are highly damaging to Monsanto's reputation. ... The government and its employees have a responsibility to protect those being investigated from unfair "official" public accusations.

Moore wrote again to EPA criminal attorney Howard Berman on November, 15 saying Jenkins' behavior:

is highly inappropriate and a violation of the agency's responsibility, under the [American Bar Association] code of ethics ... the agency should take definitive action to prevent this kind of ethics violation from recurring.

The next letter from Moore to Berman⁴² on March 12, 1992, reveals something of the relationship between Monsanto and EPA.

As a follow up to our telephone conversation of last week For all the reasons I have previously discussed with you, there is no basis for a conclusion that fraud was perpetrated. The inquiry by EPA's criminal unit should be concluded expeditiously so that Monsanto can clear its good name and such references to the alleged criminal nature of the studies will cease.

In our last conversation you indicated that you would get back to me quickly on the status of the scientific review of the studies and, if possible, what body is doing the review.

It is clear from the FOIA record that Monsanto had access and communications with EPA that were not available to the general public. What the record does not and cannot show are the phone calls and private meetings that may have also taken place. Furthermore, there is no reason to expect that Monsanto's lobbying was limited to EPA. It is not unreasonable to suspect that

Monsanto may have also made contact within Congress and the White House.

In May of 1992, it again looked as if the investigation might be getting off the ground. The Report of Investigation says: "Assistance from the EPA Science Advisory Board will be sought." But, as reported in a July 7, Report of Interview, the SAB dashed that hope, saying they are not revisiting the dioxin issue. Finally, on August 4, 1992, scientific help arrived in the person of Dr. William Farland, but only to nail the lid shut on the coffin of a long dead investigation.

The criminal investigation's Report of Interview of Dr. Farland says:

The 1980-85 Analysis of dioxin data by EPA was ultimately used to establish drinking water guidance, assist superfund site specific cleanup decisions and in state regulatory decisions. However, there are NO direct regulations that have been specifically set as a result of this data assessment.

Dr. Farland stated that if it were to ever turn out that the results of the Zack/Suskind and Suskind/Hertzberg were positive, this would only result in there being limited human evidence of carcinogenicity ... the results would still be the same. ...

[E]ven if the human data ... were falsified by the researchers, there would have been little implications in the end because these studies were essentially disregarded in the regulatory decisions.

Based on this, on August 7, 1992, EPA closed the criminal investigation, saying:

This investigation is closed. The submission of allegedly fraudulent studies to the EPA were determined to be immaterial to the regulatory process. Further, allegations made in the Kemner litigation appear to be beyond the statute of limitations.⁴³

The abrupt closing left many issues unaddressed:

- o The agents did not respond to, and indeed, did not appear to have read Dr. Jenkins memos of November 15, 1990 and January 24, 1991 which were written to refute the very arguments raised by Dr. Farland as to the relevance of the Monsanto studies.
- o In Dr. Jenkins experience, the classification of dioxin as a B2 carcinogen (animal data only) has had a significant

negative effect on EPA regulation of dioxin. Dr. Farland is an office director in research and development and as such is remote from the business of writing regulations whereas Dr. Jenkins has been intimately involved in regulation writing for fifteen years.

- o Dr. Farland may be disingenuous or ignorant when he does not mention the very significant effect of dioxin classification on the Veterans Administration's determinations about Agent Orange benefits and on the veteran's litigation against Monsanto, but these factors were all pointed out to the investigators by Dr. Jenkins.
- o All that aside, why did the investigators believe that the influences that Dr. Farland did mention, namely: "to establish drinking water guidance, assist superfund site specific cleanup decisions and in state regulatory decisions", were of no importance?
- o If the Monsanto studies were fraudulent to begin with, then the statute of limitations would not have expired because the letters, written by Monsanto and their attorneys as late as 1992, defending the studies would have constituted an ongoing conspiracy to defraud the government and to conceal evidence of the fraud.

Thus the investigation was closed in August 1992. It had gone on for two years without having investigated anything. No one blushed at the memory of Administrator Reilly 's assurances in the *Federal Register* that:

As a matter of Policy, EPA does investigate allegations of false statements and/or misrepresentation, and if appropriate, will evaluate the full range of enforcement options available to address legitimate charges of misconduct.

In this case they decided on the enforcement option without conducting the investigation.

There was no public announcement that the investigation was closed. Dr. Jenkins didn't learn about it until fifteen months later. Yet Monsanto knew within a few days of EPA's closure. A note from someone high up in the Office of Enforcement to someone else, probably his boss, dated August 26, 1992, says:

Today I spoke with Jim Moore, attorney for Weyerhaeuser and Monsanto ... he said he has talked with [?], who told him that the case was "dropped." ... Now Jim Moore wants to talk about what EPA/DOJ might or should say to set the record straight. ... I must agree with him that it was certainly unfortunate that an EPA employee

revealed the existence of a criminal investigation[.] ... It is my view that it would be appropriate in these unique circumstances to seriously entertain a proposal ... to set the record straight by untarnishing the company's reputation. ... [N]o doubt Jim Moore would have some specific thoughts to offer[.] ... At the very least, I would think that he would be entitled to a letter saying that the investigation was closed by OCE for lack of evidence sufficient to support a criminal prosecution. He would probably want more than this.⁴⁴

The harassment of Cate Jenkins

Dr. Cate Jenkins has been an environmental scientist with EPA since 1979. Before getting involved with Monsanto and the Kemner brief in 1990, she had, by 1987, already become a well known whistleblower over, what she felt was fraud, waste, or abuse in the agency's handling of dioxin laden wastes from the wood preserving industry and EPA's regulatory decisions on the synthetic plant hormone Alar.

During the months of March through August 1990, copies of correspondence between Jenkins immediate supervisor Mike Petruska and his associates and his immediate supervisor reflect EPA management's disturbance with Jenkins involvement in whistleblowing activities.⁴⁵ For example her former manager, Ed Abrams, when asked what he thought should be done with Jenkins, wrote:

I don't think Cate should be involved with anything that puts her in direct contact with the regulated community or the general public. If we insist on retaining her, place her in some administrative or staff position (like Bill Sanjour) and not worry about whether she is happy.⁴⁶

Within days of learning that the Office of Enforcement had initiated a criminal investigation of Monsanto based on Jenkins' allegations, her job duties were withdrawn without warning. She was not given any assignments from August 30, 1990 until she was reassigned on April 8, 1992⁴⁷ to a job which was primarily administrative or clerical⁴⁸. Just as Ed Abrams had recommended.

During this time, the agency spent considerable energy researching anything they could find to discipline her, including her sending letters to Congress⁴⁹, using EPA stationery⁵⁰ and disclosing the existence of a criminal investigation, only to find that there was nothing illegal or contrary to government rules about any of these activities.⁵¹ Shortly after she was reassigned, Dr. Jenkins filed a complaint with the Department of Labor claiming that she was being harassed for carrying out perfectly legal activities.

Investigation of Jenkins' complaint

During May 1992, an examiner from the Department of Labor interviewed some of her present and former managers. In the examiner's write-up⁵², the most interesting quotes came from Ed Abrams. Among them are:

Cate appears to be on a mission to eliminate dioxins wherever they may be.

Cate Jenkins has a very intelligent mind and it's a shame it can't be focused differently.

[M]anagement has been too soft in the past in dealing with Cate's activities[.]

The examiner concluded by agreeing with

Dr. Jenkins' allegations that EPA discriminated against her due to her protected whistleblowing activities[.] ... The Feb., 1990 letters do appear to have been the initial trigger for her re-assignment[.] ... None of the rationales [explaining her transfer] given by EPA via Bussard appear valid. ... Recommendation: Jenkins be re-instated ... & reimbursed for any legal fees and costs.⁵³

The Department of Labor District Director concurred⁵⁴, but EPA chose to appeal for a formal hearing before an administrative law judge. This gave Jenkins' lawyers the opportunity to take depositions of all the key players and to question them under oath and to bring in their own witnesses. Some of the facts which emerged and are listed in the Complainant's Post-Hearing Brief are:

- o Dr. Jenkins received several cash awards for performance which "exceeded expectations" for the two years preceding the date her assignments were removed (pg. 4).
- o She was never criticized or disciplined for the way she interacted with the regulated community, the public, or any other outside parties (pg. 4).
- o Mr. Bussard testified that he had a direct conversation with Monsanto concerning Jenkins' allegations of fraud (pg. 9).
- o Bussard said that people in EPA were concerned about litigation from Monsanto over Jenkins' communications (pg. 9).
- o Mike Petruska ruled out any assignments for Jenkins which would involve Monsanto (pg. 10).

- o Ed Abrams testified that "but for her crusade on dioxins", Dr. Jenkins would be a very valuable member of his team (pg. 12).

Dr. Jenkins' lawyer brought in a witness to counteract EPA's criticism of her ability to appropriately interact with the public. He was John Thomas Burch, Jr., an attorney, a Viet Nam veteran and the chairman of the National Viet Nam Veterans Coalition. He testified that other people in EPA had referred him to Jenkins and that she was the only person in EPA who was responsive to his inquiries. He said she was friendly, helpful, unbiased, approachable, a seeker of truth, but yet, not a zealot.

Mr. Burch testified that Dr. Jenkins' memos about the Monsanto studies "broke a roadblock" to additional legislation in Congress which "meant thousands of [veterans] getting medical care who wouldn't have gotten it otherwise." For this she was awarded a plaque for exemplary service to Viet Nam veterans.⁵⁵

The judge ruled in Jenkins' favor.⁵⁶ For the third time, EPA refused to accept the decision and continued to use taxpayer funds to appeal the case to the Secretary of Labor, who also ruled for Jenkins.⁵⁷ This was the second EPA whistleblower case in less than a year that went all the way up to the Secretary and in both cases the Secretary ruled against EPA. The agency was getting a bad reputation with the Labor Department, so after two years of fruitless litigation, EPA management threw in the towel and promised to restore Jenkins to her old job.

Although she had committed no crime, Jenkins had been vilified and harassed for the sin of wanting to protect the public from dioxin. Many wrongs, including violations of EPA's own regulations, were committed by those who illegally harassed her, but no one has suggested punishment for them. And while many EPA officials were willing, even anxious, to apologize to Monsanto, none has come forward to apologize to Dr. Jenkins.

Conclusions

It was probably foolish to launch a criminal rather than a civil investigation. The level of proof required for a civil judgement is that it was "more likely than not" that an offense was committed, whereas a criminal conviction requires a burden of proof that is "beyond a reasonable doubt". It would be almost impossible to satisfy the level of certainty required for a criminal conviction in a case involving differences of opinions between qualified scientists. On the other hand, the Kemner trial demonstrated that a civil judgement might be obtained.

One has to feel sorry for agents West and Guarino. They started out with enthusiasm in a whole different kind of investigation

which could prove to be very important, only to find that their chief source of information was a pariah, despised by EPA management, and that the EPA science community wanted nothing to do with their investigation. Without the scientific support of the agency, they were left "turning slowly in the wind".

How does one explain the disinterest, even hostility of the agency's science community? There are several epidemiologists in EPA and more in other government agencies who were familiar with the Monsanto studies because these studies had to be considered in their own research. In light of all the publicity, they must also have been familiar with Jenkins' memo and the even more detailed Greenpeace study "Science for Sale", by Joe Thornton. They must then have formed a conclusion, at least in their own minds, about the validity of the controversial studies. If their conclusion was that the case made by Jenkins and Thornton, was unconvincing and that they could see nothing significantly wrong with the Monsanto studies, wouldn't they have told investigators not to waste their time?

Agreeing with the validity of the studies would have been the simplest and most direct way to close the case. Yet Dr. Farland, in the case closing interview with the detectives, side-stepped the issue. Why would he do that if he thought the studies were valid? If the studies were valid, he would not have had to resort to the questionable argument that their validity was irrelevant.

On the other hand, there are many reasons for believing that the studies may be flawed. At least two different government epidemiologists involved in dioxin research have written letters questioning the way Monsanto did some of their studies. These are Marilyn Fingerhut of NIOSH⁵⁸ and David Bayliss of EPA's Office of Health and Environmental Assessment⁵⁹. Dr. Fingerhut and her colleagues at NIOSH published a study of major importance which re-examined data on workers exposed to dioxin, including the Monsanto data, and concluded that there was a definite link between dioxin and several forms of cancer⁶⁰. In the process, NIOSH classified several of the Monsanto workers differently than Monsanto did, all of which tended to reverse Monsanto's conclusions. Based on this and other studies, EPA's Office of Health and Environmental Assessment has recently concluded that the human data base now supports "an association between exposure to dioxin and increased cancer mortality".⁶¹ Add this to the Science magazine article and the Kemner decision and it is reasonable to speculate that a proper scientific review would show the Monsanto studies to be flawed.

The Office of Health and Environmental Assessment, Dr. Farland's office, is usually in the forefront in EPA in defining new chemical threats to human health and the environment. In internal EPA work groups, OHEA frequently finds itself battling

program offices, such as air and pesticides, who resist attempts to introduce new substances for them to regulate. In addition, the office has to battle industry every time a new substance is discovered to be harmful.

Therefore, it is understandable that OHEA would not want to get into battle with Monsanto over some studies which OHEA had already decided not to use.⁶² Considering the importance of the issue to Monsanto, one can assume that they would struggle mightily to defend their studies, and if OHEA were to come up with some formal assessment which decided the studies were flawed, the agency and OHEA would run the risk of being tied up in litigation and recriminations and everything else that Monsanto could throw at them for years to come. From OHEA's viewpoint, there is nothing to be gained by such a struggle and a great deal to be lost.

The issue one is faced with is more fundamental than any possible dereliction by any one EPA office. By now Americans have seen many examples of corporations secretly weighing the cost of correcting some great harm their products may be causing versus the cost of continuing the harm (e.g. Johns Manville with asbestos and the Ford Motor Company with the Pinto).

This kind of cold-blooded analysis is bad enough when the product is used by the general public, but it is insufferable when used on our own armed forces who were exposed in combat. But this is exactly the kind of behavior that the Jenkins memo had raised. The issue wasn't false science, but allegedly using false science to cover-up a callous hard-hearted decision to continue poisoning our GIs and their children because it was cheaper to do so.

When Jenkins made her allegations, and when the veterans groups made known the full implication of those allegations, a government with a decent respect for the welfare of its armed forces would have publicly ordered a full and impartial investigation with all the resources and support necessary and let the chips fall where they may. Instead, our top government officials were silent or even worse, they let it be known that they despised the messenger and had nothing but friendly feelings for the accused. The United States government gave no support or encouragement to a scientific, civil, or criminal investigation of Monsanto. No mere office director in EPA is big enough or strong enough to take on an influential giant like Monsanto without that support and encouragement.

Recommendations

What should have been done and what still can be done is what was suggested earlier. Convene a panel of disinterested scientists, with the full support and authority of the U.S. government, to

determine if the studies are valid, and if not then determine whether the results would have been positive if the studies were done correctly. If the answers to the first two questions are yes, then the panel should determine if it is more likely than not that the kinds of errors found by the panel could be honest mistakes made by competent professionals. The panel's findings should then be made public.

If the answer to the last question is no, then the Justice Department should review the panel's findings to determine what, if any, enforcement action should be taken. This is what the government promised the American people it would do, but never did. Our veterans deserve nothing less.

Other recommendations are:

- o EPA should stop running a KGB type operation that tries to control anyone who calls attention to waste, fraud, and abuse by high ranking officials and powerful private interests. The agency should pay attention instead to the message of these whistleblowers. Failed attempts at suppression only increase the public's distrust of its government.
- o To achieve this, senior EPA executives, especially political appointees, should undergo training in the implications of such laws as the Freedom of Information Act, the Privacy Act, various whistleblower protection provisions, and the False Claims Act which have increasingly thwarted management's ability to control whistleblowers.
- o EPA and the scientific community should take a more skeptical view of self-serving industry sponsored studies.
- o Many EPA executives, especially political appointees and attorneys, use public service as a mere stepping stone to high paying positions by courting the favor of private interests when they are supposed to be regulating in the public interest. They should not be allowed to become consultants to or accept positions with the corporations the agency regulates for some years after they leave.

cc: Inspector General

END NOTES

1. The allegations in Dr. Jenkins' memo and later by Greenpeace, charging fraud by Monsanto, were picked up by newspapers around the world including *The Washington Post*, *Newsday*, *The Atlanta Constitution* and *The St. Louis Post-Dispatch*. Nevertheless, when Dr. Gaffey, one of the authors of the studies in question and recently retired from Monsanto, chose to sue someone for libel, he chose the minuscule Environmental Research Foundation (ERF), a three person operation which publishes a one page weekly environmental newsletter with a circulation of 1,700.

In order to prepare for its defense, ERF sent a Freedom of Information Act (FOIA) request to EPA for all the documentation concerning EPA's criminal investigation of Monsanto based on the Jenkins memo. Some of the material in this report is from that FOIA response.

EPA replied with a one and a half foot stack of censored documents in which the agency blanked out the names of individuals and replaced them with brackets, thus []. In some cases it was possible to guess whose name was removed and in these cases I have indicated the name as, for example, [John Smith?] but in other cases I am forced to show the name as [?].

2. J.A. Zack, and R. Suskind, "The Mortality Experience of Workers Exposed to Tetrachlorodibenzodioxin in a Trichlorophenol Process Accident," *J. of Occupational Medicine*, Vol. 22 (1980), pgs. 11-14.

J.A. Zack, and W. R. Gaffey, "A Mortality Study Of Workers Employed At The Monsanto Company Plant In Nitro, West Virginia," *Environmental Science Research*, Vol. 26 (1983), pgs. 575-591.

R.R. Suskind, and V.S. Hertzberg, "Human Health Effects Of 2,4,5-T And Its Toxic Contaminants," *Journal of the American Medical Association*, Vol. 251, No. 18 (1984), pgs. 2372-2380.

R.R. Suskind, "Chloracne, 'The Hallmark Of Dioxin Intoxication,'" *Scandinavian Journal of Work, Environment and Health*, Vol. 11, No. 3 (1985), pgs. 165-171.

R.R. Suskind, "Long-Term Health Effects Of Exposure To 2,4,5-T And/Or Its Contaminants," *Chemosphere*, Vol. 12, No. 4-5 (1983), pg. 769.

3. U.S. Environmental Protection Agency, *A Cancer-Risk Specific Dose for 2,3,7,8-TCDD*, External Review Draft and appendices, EPA/600-6-88-007A, Washington DC, June, 1988.

4. Kemner, et al v Monsanto Co., Civil No. 80-L-970, Circuit Court of the twentieth Judicial Circuit, St. Clair County, Illinois.
5. Kemner, et al v Monsanto Co., No. 80-L-970, In the Appellate Court of Illinois Fifth District, Plaintiffs-Appellees' Brief, October 3, 1989.
6. Kemner v Monsanto, Plaintiffs brief, previously cited, pg. 29.
7. 160 Ill. Dec. 192, 576 N.E.2d 1146 (Ill. App. 5 Dist. 1991).
8. U.S. Environmental Protection Agency, 1988, previously cited.
9. Cate Jenkins, "Newly Revealed Fraud by Monsanto in an Epidemiological Study Used by EPA to Assess Human health Effects from Dioxins", EPA memorandum to Raymond Loehr, Chairman, Executive Committee, EPA Science Advisory Board, February 23, 1990.
10. [W. H. Farland, Director?,] EPA Office of Health and Environmental Assessment, "Report of Interview on Monsanto Case", EPA memorandum to [John West or Kevin Guarino?], EPA Office of Criminal Enforcement, February 18, 1993.
11. U.S. Environmental Protection Agency, *The Risk Assessment Guidelines of 1986*, EPA/600/8-87/045, Washington, DC, August, 1987, pg. 1-12.
12. Richard J. Mahoney, CEO, Monsanto Co., Letter to William Reilly, EPA Administrator, March 26, 1990.
13. Don R. Clay, EPA Assistant Administrator for Solid Waste and Emergency Response, EPA letter to Richard J. Mahoney, Chairman and CEO, Monsanto Company, May 4, 1990.
14. *Federal Register*, Vol. 54, pg. 40389, October 2, 1989. This is in the preamble to the VA's final rule on "Evaluation of Studies Relating to Health Effects of Dioxin and Radiation Exposure".
15. [?], NEIC Investigative Unit, "Monsanto Chemical Company (90-07-06-101)", EPA memorandum to [?], Office of Criminal Enforcement, August 22, 1990.
16. Personal conversation with Dr. Jenkins.
17. [Frank Kover?], "TSCA Compliance - - TIP & COMPLAINT", EPA form memo to [?], Chemical Screening Branch, July 2, 1990.
18. [Michael J. Walker, Director,?] EPA Toxics Litigation Division, "False Study Involving Monsanto Dioxin Data To Be Investigated By University", EPA memo to [?], May 18, 1990.

19. J. Senger, Monsanto Co., Letter to Don Clay, EPA Assistant Administrator, October 1, 1990.

20. Monsanto also requested, in this letter, that the studies in question undergo a scientific audit, which is precisely what Jenkins requested.

21. Tape recording of the interview made by Dr. Cate Jenkins.

22. C. Jenkins, "Criminal Investigation of Monsanto Corporation - Cover-up of Dioxin Contamination in Products - Falsification of Dioxin Health Studies", EPA memorandum to John West, EPA NEIC, and Kevin Guarino, EPA NEIC, November 15, 1990.

23. Jenkins believes that the wide distribution of her February 23rd memo was undertaken by Greenpeace. She had sent them a courtesy copy as they were the source of the information used in the memo.

24. Transcript of tape recording of the conversation made by Dr. Jenkins.

25. J. Thornton, *Science for Sale*, Greenpeace, Washington, DC, November 29, 1990.

26. Malcolm Gladwell, "Greenpeace Digs Deep Into Dioxin Debate", *The Washington Post*, November 30, 1990, pg. A27.

27. [?], Office of the Assistant Attorney General, letter to John Martin, EPA Inspector General on letterhead of U.S. Department of Justice, Environment and Natural Resources Division, December 3, 1990.

28. Cate Jenkins v EPA, Case No. 92-CAA-6 before the Dept. of Labor Office of Administrative Law Judges, Complainant's Post-Hearing Brief, November 23, 1992, pg. 13.

29. Victor John Yannacone, Jr., attorney, letter to Judge Jack B. Weinstein, U.S. District Court for Eastern District of New York on letterhead of Yannacone & Yannacone, attorneys, Patchogue, NY, December 4, 1990.

30. [?], EPA Office of Enforcement, "Briefing of House/Senate Staff on Monsanto Investigation", EPA memo to The File, December 6, 1990.

31. Don Clay, EPA Assistant Administrator, Letter to J. Senger, vice president, Monsanto Co., December 10, 1990.

On leaving EPA, Clay formed an industry sponsored organization called the RCRA Policy Forum which brings together EPA hazardous waste regulators with industries producing hazardous wastes to

discuss EPA's plans for regulation.

32. Cate Jenkins, "Impact of Falsified Monsanto Human Studies on Dioxin Regulations by EPA and Other Agencies -- January 24, 1991 NIOSH Study Reverses Monsanto Study Findings and Exposes Certain Fraudulent Methods", EPA memorandum to John West, EPA NEIC, and Kevin Guarino, EPA NEIC, January 24, 1991.

33. [?], Office of Criminal Enforcement Counsel, "Action Plan for Agency-wide Policy Addressing Responsibilities and Obligations of EPA Employees Concerning Ongoing Enforcement Actions", EPA memorandum to [?], Office of Enforcement, January 31, 1991.

34. *Federal Register*, Vol. 56, pg. 19999, May 1, 1991.

35. William Reilly, EPA Administrator, letter to Pat Costner, Greenpeace, April 23, 1991.

36. Found in the Greenpeace Petition docket (Docket Number OPTS-211029) stapled to item B 24.

37. [Kevin Guarino?], Monthly Status Report for March, 1991, U.S. EPA, NEIC Investigative Unit, Control number 90-07-06-101(10Q), signed April 1, 1991.

38. [Kevin Guarino?], Monthly Status Report for July, 1991 through May, 1992, U.S. EPA, NEIC Investigative Unit, Control number 90-07-06-101(10Q), signed May 27, 1992.

39. Leslie Roberts, "Dioxin Risk Revisited", *Science*, Vol. 251, pg. 624, (February 8, 1991).

40. James Moore was a protégé of former EPA administrator William Ruckelshaus and was, during period under discussion, a partner in Ruckelshaus' old law firm of Perkins & Coie. Ruckelshaus was a director of Monsanto between his two terms as administrator of EPA. After his second term, Ruckelshaus was a paid consultant to Monsanto. Ruckelshaus is generally credited with installing two other protégés, William Reilly, as administrator of EPA and Henry Habicht, as deputy administrator, both of whom served during period discussed here.

41. Raymond Ludwiszewski left the agency to become a partner, specializing in environmental regulation, in the law firm of Gibson, Dunn & Crutcher which places particular emphasis on representation of clients before regulatory agencies.

42. Howard Berman is now with the Jefferson Group, a Washington public relations and lobbying firm.

43. [Kevin Guarino?], Report of Investigation, for the period June 1, 1992 Through August 7, 1992, NEIC Investigative Unit, Control number 90-07-06-101(10Q), signed August 7, 1992.

44. There is no evidence that this advice was followed.

45. Diane C. Koplewski, Dept. of Labor Examiner, "Narrative Report", May 21, 1992, pg. 6. Attached to letter from Travis M. Campbell, Dept. of Labor District Director to EPA, May 26, 1992.

46. Jenkins v EPA, Complainant's Post-Hearing Brief, previously cited, pg. 15.

47. Koplewski, previously cited, pg. 5.

48. Jenkins v EPA, Complainant's Post-Hearing Brief, previously cited, pg. 17.

49. Koplewski, previously cited, pg. 6.

50. Jenkins v EPA, Complainant's Post-Hearing Brief, previously cited, pg. 15.

51. Jenkins v EPA, Complainant's Post-Hearing Brief, previously cited, pgs. 12-15.

52. Koplewski, previously cited, attachment.

53. Koplewski, previously cited, pgs. 12-13.

54. Letter from Travis M. Campbell, Dept. of Labor District Director to EPA, May 26, 1992.

55. Jenkins v EPA, transcript September 29, 1992.

56. Jenkins v EPA, Recommended Decision and Order.

57. Jenkins v EPA, Before the Secretary of Labor, Decision and Order, May 18, 1994.

58. Marilyn Fingerhut, NIOSH, Letter to James Collins, Director of Epidemiology, Monsanto Co., April 24, 1990.

59. David Bayliss, Epidemiologist, EPA Office of Health and Environmental Assessment, Letter to James Collins, Director of Epidemiology, Monsanto Co., November 10, 1993.

60. Fingerhut, M. et al., "Cancer Mortality in Workers Exposed to 2,3,7,8-tetrachlorodibenzo-p-dioxin", *New England Journal Of Medicine*, Vol. 324, No. 4 (January 24, 1991), pgs. 212-218.

61. "EPA Draft Chapter on Dioxin Risk Characterization Dated May 2, 1994", *Daily Environment Report*, Bureau of National Affairs, Washington, DC, May 12, 1994, pg. E-1.

62. Health Assessment for 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) and Related Compounds, Chapter 7. Epidemiology/Human Data", EPA/600/AP-92/001g, Office of Health and Environmental Assessment, Office of Research and Development, U.S. EPA, Washington, DC, Draft revised June, 1993, p. 7-9.

"This cohort [the 172 members of the NIOSH study by Fingerhut et al., 1991] subsumed, and thereby supplanted, company-specific cohorts from Dow Chemical USA ... and the Monsanto Company (Zack and Gaffey, 1983; Zack and Suskind, 1980) that had been the subject of previous reports".