

University of Colorado Law School

Colorado Law Scholarly Commons

Getting a Handle on Hazardous Waste Control
(Summer Conference, June 9-10)

1986

6-9-1986

Reduction of Hazardous Waste—Pay Me Now or Pay Me Later

Frank B. Friedman

Follow this and additional works at: <https://scholar.law.colorado.edu/getting-handle-on-hazardous-waste-control>



Part of the [Administrative Law Commons](#), [Environmental Engineering Commons](#), [Environmental Health and Protection Commons](#), [Environmental Law Commons](#), [Environmental Policy Commons](#), [Jurisdiction Commons](#), [Legislation Commons](#), [Litigation Commons](#), [Natural Resource Economics Commons](#), [Natural Resources and Conservation Commons](#), [Natural Resources Law Commons](#), [Natural Resources Management and Policy Commons](#), [Oil, Gas, and Energy Commons](#), [Oil, Gas, and Mineral Law Commons](#), [Science and Technology Law Commons](#), and the [State and Local Government Law Commons](#)

Citation Information

Friedman, Frank B., "Reduction of Hazardous Waste—Pay Me Now or Pay Me Later" (1986). *Getting a Handle on Hazardous Waste Control (Summer Conference, June 9-10)*. <https://scholar.law.colorado.edu/getting-handle-on-hazardous-waste-control/4>

Reproduced with permission of the Getches-Wilkinson Center for Natural Resources, Energy, and the Environment (formerly the Natural Resources Law Center) at the University of Colorado Law School.



Frank B. Friedman, *Reduction of Hazardous Waste—Pay Me Now or Pay Me Later*, in *GETTING A HANDLE ON HAZARDOUS WASTE CONTROL* (Natural Res. Law Ctr., Univ. of Colo. Sch. of Law 1986).

Reproduced with permission of the Getches-Wilkinson Center for Natural Resources, Energy, and the Environment (formerly the Natural Resources Law Center) at the University of Colorado Law School.

REDUCTION OF HAZARDOUS WASTE - PAY ME NOW OR PAY ME LATER

Frank B. Friedman
Vice President, Health, Environment & Safety
Occidental Petroleum Corporation
Los Angeles, California

GETTING A HANDLE ON HAZARDOUS WASTE CONTROLS

A Short Course Sponsored by the
Natural Resources Law Center
University of Colorado
School of Law

June 9-10, 1986

REDUCTION OF HAZARDOUS WASTE - PAY ME NOW OR PAY ME LATER

Frank B. Friedman

Vice President, Health, Environment & Safety

Occidental Petroleum Corporation

Los Angeles, California 90024

Background

1. Environmental management must focus both on permits and on process. As lawyers, we tend to focus on the regulatory aspects of permitting. However, the most cost-effective approach is to focus on the process; namely, to avoid the permitting issues by changing the engineering. At Occidental, we have been focusing on the process by first obtaining inventory of solid wastes, emissions and effluents and then using such inventories as a means of prioritizing methods of reduction. This process review is being utilized throughout the entire Occidental Petroleum Corporation and is part of our general management program, which allows top management and the Environmental Committee of the Board of Directors to both be aware of and support these programs. See generally, Friedman, "Organizing and Managing Effective Corporate Environmental Programs", Environmental Forum, May 1984, p. 40. In essence, we have tried to take a systems approach to cost reduction in these matters as part of our philosophy "that environmental management includes the opportunity to reduce both present and future costs (a 'profit improvement center') and that compliance is only a small portion of good environmental management." Friedman, "Managing and Resolving Corporate Environmental Issues", Environmental Forum, February 1985 at p. 30.

2. The extensive focus on waste reduction in our chemical division, OxyChem, began in 1979. In 1979, following an inventory of hazardous waste, major efforts were begun to identify means of reducing hazardous waste, and particularly landfilling. In 1979, OxyChem and related facilities generated over 120,000 tons of hazardous waste, including wastes subsequently delisted and aqueous leachates from remediation of past disposal sites. Excluding these categories of hazardous wastes, on a comparable basis, OxyChem has reduced the generation of hazardous wastes since 1979 from 45,000 tons per year to 9,000 tons per year in 1985. Further and a more significant statistic is that of the 45,000 tons generated in 1979, OxyChem landfilled 80%, whereas of the 9,000 tons generated in 1985, OxyChem landfilled only 19%.

3. A variety of means were utilized to reduce the amount of hazardous waste during the 1979 through 1985 period. The first steps were to closely examine the waste to determine if it was in fact hazardous. Forty-thousand tons of the 120,000 tons was formally delisted pursuant to special industry exemption. Process changes played a major role in further reduction. Approximately 8,500 tons were completely eliminated at the source due to on-site process changes. An additional 18,000 tons was eliminated by process changes which allowed subsequent delisting. A variety of processing on-site also allowed for reduction, including 9,500 tons as a result of on-site processing, and 3,300 tons as a result of off-site processing.

4. OxyChem has continually emphasized the use of permanent methods of waste disposal such as incineration and carbon treatment. Approximately 7,200 tons per year had been incinerated prior to 1979 and that was increased by another 1,800 tons during the 1979-1985 period. In addition, efforts are now underway to obtain permits to allow burning of PCB-contaminated and PCB and dioxin-contaminated wastes in an existing incinerator in Niagara Falls, as part of clean-up efforts for earlier generated hazardous wastes. As referred to earlier, some 18,000 tons a year of aqueous leachate from past disposal sites is treated in activated carbon units to permit its discharge to the river.

5. Recent efforts to reduce hazardous wastes further have been difficult. There was only a 400 ton reduction from 1984 levels in 1985, but, as noted previously, the total levels of hazardous waste generated by existing operations is down to approximately 10,000 tons per year, or over 92% from 1979 levels. However, efforts are still continuing to segregate, pretreat and carefully analyze and characterize waste streams to determine further reductions. In essence for OxyChem, virtually all the remaining hazardous waste generated from existing operations is treated by incineration or by absorption on activated carbon.

6. In essence, we have found that the best way of avoiding RCRA issues has been to get out of the RCRA loop. Note that EPA is taking the position, based on the recent RCRA amendments, particularly Section 3004 (u) (which provides that all RCRA permits--including those issued for storage units and for post closure care--must require "corrective action for all releases of hazardous waste or constituents from any solid waste management unit at [the]...facility...regardless of the time at which the waste was placed in such unit.") to provide authority under RCRA to clean-up virtually any contamination at a plant site. Further EPA contends that its "interim status" authority extends to releases from solid as well as hazardous waste and that EPA does not lose jurisdiction to issue clean-up orders even when an owner or operator closes a facility under interim status. OxyChem has worked effectively to get out of the RCRA loop. When RCRA was initiated, some 75 of existing OxyChem plants filed notification of hazardous waste activity, but only 13 of these had to file the Part A application. Five of the 13 have since been delisted, and of the remaining 8, 3 more will be delisted by the end of 1987.

7. "Official" figures on hazardous waste generation are deceptive. The major difficulty with these numbers is "the incorporation of wastewater management totals in the tabulations when process wastes are being treated with the effluents being regulated under Water Pollution Control statutes and regulations." (See letter attached from Dr. Alex Katona, who was primarily responsible for OxyChem's successful efforts to reduce hazardous waste to Ms. Dana Duxbury, March 10, 1985). Thus, "official" figures for OxyChem include 240,000 tons per year of total biological treatment plant feed and 480,000 tons per year of contaminated groundwater removal and treatment from previous operations. This attached letter clearly explains many of the other issues with respect to the "numbers game" in reviewing hazardous waste.

8. The Chemical Manufacturing Association (CMA) in its fourth annual survey of its member companies assumed a drop of 16% of generation of hazardous waste, including wastewater from 1981 through the last survey year of 1984. CMA noted that of the 176.57 million tons generated, 175.24 million tons, or 99.25% was wastewater. When solid waste was examined, the plants subject to this survey had reduced their generation by 59.2% in that four year period. Disposal to landfill had declined by 33.4% and incineration had grown from 13.6% to 27.6%.

9. At OxyChem, and for that matter, throughout the entire Occidental Petroleum Corporation, effluents are being inventoried and major efforts are underway to reduce these effluents, with particular emphasis on the "toxic pollutants". Similarly, air emissions are also being inventoried to target reductions, particularly on "hazardous air pollutants" and possible candidates for listing as hazardous air pollutants. Efforts to reduce hazardous waste, effluent and emissions go well beyond regulatory requirements. In essence, material disposed of is product lost. We believe such efforts are very cost effective. An effective waste management program not only reduces your concerns about regulation and third-party suits, but your overall operations are much most efficient. Social responsibility and economics can co-exist.

Occidental Chemical Corporation

March 10, 1985

Ms. Dana Duxbury
Natural Resources Director
League of Women Voters - Massachusetts
151 Hidden Road
Andover, MA 01810

Dear Ms. Duxbury:

Pursuant to your request during our telephone conversation of February 20, 1985, I have compiled the figures that indicate the quantity of Hazardous Waste (as defined by RCRA and also by certain States that have more stringent standards) generated by Occidental Chemical Corporation during calendar year 1983.

Because of the complexity of the Hazardous Waste Management Regulations I have provided an explanation below for our inclusion of certain wastewater tonnages in our tabulation of 1983 Hazardous Waste Generation. All of these wastewaters were detoxified via treatment by OCC prior to their discharge, with final discharges being regulated under NPDES permits or under agreements with POTWs whose discharges, in turn, are regulated under NPDES permits.

1983 Hazardous Waste Generation

- | | |
|--|------------|
| 1. Conventional RCRA and State Hazardous Solid Waste
(as opposed to wastewater) | 11,954 T. |
| 2. Hazardous Wastewater from Sumps and Dikes
(contaminated with organics and activated carbon treated) | 3,139 T. |
| 3. Deionizer Unit Effluent
(neutralization step prior to discharge to POTW is
regulated under Permit By Rule; a non-RCRA permitted
treatment) | 5,506 T. |
| 4. Total Biological Treatment Plant Feed
(The treatment plant does not require a RCRA permit.
The feed contains roughly 44,000 T. of corrosive
wastewater [from an impoundment] that currently mixes
with roughly 196,000 T. of non-hazardous feed to render
the entire combined stream hazardous). | 240,000 T. |



Occidental Chemical

Ms. Dana Duxbury

-2-

March 10, 1985

5. Leachate from Remediation of an OCC-owned Hazardous Waste Landfill
(Wastewater having approximately 950 ppm organic contaminants is activated carbon treated). 16,833 T.
6. Leachate from OCC-owned Hazardous Waste Landfill
(This landfill is officially closed and leachate containing approximately 1.4 ppm total organic contaminants is activated carbon treated). 10,871 T.
7. Contaminated Groundwater Removal and Treatment
(Groundwater containing approximately 15 ppm organic contaminants is pumped to the surface and is activated carbon treated. The groundwater is not a RCRA hazardous waste but is deemed to be "special waste" whose detoxification is mandated in a Consent Agreement with a State. 479,800 T.

The foregoing provides an illustration of the dangers inherent in using numbers indiscriminately in discussing hazardous waste reduction efforts. As many of us, as individual companies, increase our efforts in remediation of former waste disposal or product spill areas, our waste generation totals will tend to increase despite successful efforts to reduce the generation of conventional hazardous solid waste. This will happen because remediation efforts generally require the handling of huge quantities of relatively lightly contaminated soil and water.

I believe that another difficulty in the waste reduction "numbers game" arises from the incorporation of wastewater management totals in the tabulations when process wastes are being treated with the effluents being regulated under Water Pollution Control statutes and regulations.

A good example of this is the Biological Treatment situation outlined in Item 4 above. The Biological Treatment facility was constructed to destroy approximately 200 T/Yr. of phenol, as a component of non-hazardous dilute aqueous solution, through biological activity. The current mode of operation of the treatment facility calls for pH adjustment of the facility feed with caustic soda which is available in an impoundment in a hazardous waste stream from reactor cleaning operations. In summary, a hazardous waste stream of approximately 44,000 T/Yr. of water containing approximately 200 T/Yr. of caustic soda, when mixed with a non-hazardous waste stream of approximately 196,000 T/Yr., results in a hazardous waste feed to the treatment unit of approximately 240,000 T/Yr. In the near future, even after we replace the impoundment with tankage, we will still be treating a very large quantity of hazardous waste in the non-RCRA permitted treatment

Occidental Chemical

Ms. Dana Duxbury

-3-

March 10, 1985

facility because the biological treatment plant cannot treat solutions containing more than approximately 500 ppm phenol, i.e. it must treat very dilute solutions. The point here is that despite our use of an environmentally superior waste treatment technique, and despite our beneficial recovery of residual base values in a caustic waste stream, the nature of the biological treatment technique is such that it automatically gives rise to the indicated very large hazardous waste generation number. If we add this number to our 1983 generation figures for more conventional wastes, i.e. 11,954 T. and 3,139 T., and if we assume that in 1984 we had completely eliminated the generation of the conventional wastes (a superhuman but impossible accomplishment), we would then have recorded a waste generation reduction of only $15,093/255,093 \times 100 = 5.9\%$ from the 1983 figures.

Good luck to you and your League members in your efforts to educate the public, our public officials, and the industrial community regarding the need for redoubled efforts in reducing the amount of hazardous waste generated.

Sincerely,

Alex Katona

Dr. Alex Katona
Manager - Solid Waste
Corporate Environment, Health & Safety

AK/6118E

cc: F. B. Friedman
D. A. Guthrie