

Hooker Chemical and Love Canal

By Tom Beauchamp

THE HISTORY OF LOVE CANAL

Love Canal is named for William T. Love, a businessman and visionary who in the late nineteenth century attempted to create a model industrial city near Niagara Falls. Love proposed that a canal be built to facilitate the generation and transmission of hydroelectric power from the falls to the city's industries. The combination of an economic recession that made financing difficult and the development of cheaper methods of transmitting electricity destroyed Love's vision, and the partially dug canal in what is now the southeast corner in the city of Niagara Falls remains the project's sole tangible legacy.

However, the area still attracted industrial development because it provided easy access to transportation, cheap electricity, and abundant water for industrial processes. Several chemical companies joined other corporations in taking advantage of the region's natural resources. The Hooker Electrochemical Company, now absorbed into the Occidental Chemical Corporation, built its first plant in the area in 1905. An Occidental Petroleum Corporation subsidiary since 1968, Hooker manufactures plastics, pesticides, chlorine, caustic soda, fertilizers, and a variety of other chemical products. With over 3,000 employees, Hooker remains one of the region's largest employers and a Niagara Falls area economic force.

In the early 1940s Love Canal's abandoned section—for many years a summer swimming hole—became a dump for barrels of waste materials produced by the various area chemical companies. Hooker received state permission in 1942 to use the site for chemical dumping. Although no accurate records were kept, it is estimated that between the early dumping period and 1953, when this tract of land was sold, these corporations deposited approximately 21,000 tons of different kinds of chemical wastes, some extremely toxic, in the old canal. The companies stored the chemicals in drums, and considered the site ideal for chemical dumping. Located in an undeveloped, largely unpopulated area, the canal featured highly impermeable clay walls that retained liquid chemical materials with virtually no penetration. Research indicated that the canal's walls permitted water penetration at the rate of a third of an inch over a 25-year period.

In 1953 Hooker closed the dump and covered it with an impermeable clay top. The Niagara Falls School Board then acquired the land that encompassed and surrounded the dump for \$1.00. Hooker advised against the acquisition and warned the school board of the toxic wastes. However, the board persisted and started condemnation proceedings to acquire land in the area. The city subsequently built an elementary school and a tract of houses adjacent to the site. The constructors removed thousands of cubic yards of topsoil. The

construction apparently damaged the integrity of the clay covering. Water from rain and heavy snows then seeped through the covering and entered the chemical-filled, clay-lined basin. The basin eventually overflowed into the houses, and the unfortunate residents had to endure the noxious smell and unwholesome sight of chemicals seeping into their basements and surfacing to the ground.

In 1978 evidence of toxic chemicals was found in the living area of several homes, which prompted the state health commissioner to order an investigation that brought a number of health hazards to light. Several adults showed incipient liver damage; young women in certain areas experienced three times the normal incidence of miscarriage; and the area had three and one-half times the normal incidence of birth defects. The investigation also uncovered epilepsy, suicide, rectal bleeding, hyperactivity, and a variety of other ills—all at above normal rates of occurrence.

Upon review of these findings, the health commissioner recommended that the elementary school be temporarily closed and that pregnant women and children under the age of two be temporarily evacuated. Shortly thereafter the governor of New York announced that the state would purchase the 235 houses nearest the canal and would assist in the relocation of dispossessed families. President Carter declared Love Canal a disaster area, qualifying the affected families for federal assistance. However, families in the adjacent ring of houses did not receive federal assistance, although they believed that the canal chemicals endangered their health as well. Early studies tended to confirm this view, but in mid-July 1982 the Environmental Protection Agency (EPA) released a study that concluded there was “no evidence that Love Canal has contributed to environmental contamination” in the outer ring of 400 homes. This report focused solely on health hazards and did not address documented symptoms of stress. For example, the divorce rate among remaining families soared as wives and children fled the area, while husbands tried to hold on to their houses and jobs.

Since the investigation first began, more than 100 different chemicals, some of them mutagens, teratogens, and carcinogens, have been identified. A number of investigations are continuing to resolve unanswered questions, including the long-range effects of chemical exposure. Cancer, for instance, often does not develop for 20 to 25 years after exposure to the cancer-producing agent. Chromosomal damage may appear only in subsequent generations.

For years many unanswered questions persisted about how to clean up the pollution and who should be held responsible for it. In many cases, these issues remained unresolved until 20 years after residents of Love Canal first found out about the condition of their yards and homes.

CRITICISMS OF HOOKER

The Hooker Chemical company figures prominently in the minds of many who raised and sought to resolve these questions. In 1977 the city of Niagara Falls employed an engineering consulting firm to study Love Canal and make

cleanup recommendations. Hooker supplied technical assistance, information, and personnel. The cost of a second study was shared equally by Hooker, the city, and the school board that had originally purchased the land from Hooker. Hooker also offered to pay one third of the estimated \$850,000 cost of cleanup.

In 1980 Hooker faced over \$2 billion in lawsuits stemming from its activities at Love Canal and other locations. Thirteen hundred private suits had been filed by mid-1982. The additional complaints and suits stemmed from past and current activities in other states as well as from other New York sites. In addition, in 1976 Virginia employees of Life Sciences who had been exposed to Kepone, a highly toxic chemical known to cause trembling and sterility in humans, filed suits totaling more than \$100 million. The suits named Hooker as a supplier of some of the raw materials used in the Virginia manufacturing process. (The parties ultimately settled the suit out of court.) In 1977 Hooker was ordered to pay \$176,000 for discharging HCCPD, a chemical used in the manufacture of Kepone and Mirex, which had caused cancer in laboratory animals, into Michigan's White Lake. In 1979 that state's officials sued Hooker for a \$200 million cleanup due to air, water, and land pollution around its White Lake plant.

While Hooker was defending its actions in Virginia and Michigan, the state of California investigated the company and ultimately brought suit on charges that Hooker's Occidental Chemical plant at Lathrop, California, had for years violated state law by dumping toxic pesticides, thereby polluting nearby ground water. Hooker officials denied the charges, but a series of memos written by Robert Edson, Occidental's environmental engineer at Lathrop, suggested that the company knew of the hazard as early as 1975 but chose to ignore it until pressured by the state investigation. In April 1975 Edson wrote, "Our laboratory records indicate that we are slowly contaminating all wells in our area, and two of our own wells are contaminated to the point of being toxic to animals and humans." A year later he wrote, "To date, we have been discharging waste water . . . containing about five tons of pesticide per year to the ground. . . . I believe we have fooled around long enough and already overpressed our luck." Another year later, Edson reiterated his charges and added that "if anyone should complain, we could be the party named in an action by the Water Quality Control Board Do we correct the situation before we have a problem or do we hold off until action is taken against us?"

Other complaints about Hooker stemmed from the same area of Love Canal. In 1976 the New York Department of Environmental Conservation banned consumption of seven species of fish taken from Lake Ontario, claiming that they were contaminated with chemicals, including Mirex. The department alleged that Hooker's Niagara Falls plant had discharged the Mirex. A Hooker-sponsored study of Lake Ontario fish disputed this allegation of Mirex contamination. Although this study has not been accepted by the state, the ban has, for the most part, been lifted.

Hooker's Hyde Park chemical waste dump, located in the Niagara Falls area, has also been a source of continuing concern and dispute to residents and

government officials. In 1972 the manager of a plant adjacent to the dump complained to Hooker about “an extremely dangerous condition affecting our plant and employees ... our midnight shift workers has [sic] complained of coughing and sore throats from the obnoxious and corrosive permeating fumes from the disposal site.” The dangerous condition was not adequately rectified, and in 1979 Hooker’s Hyde Park landfill became the subject of a nearly \$26 million lawsuit filed by the town of Niagara Falls. New York State also filed a suit for more than \$200 million for alleged damages at the Hyde Park site.

In 1980 the EPA filed four additional suits against Hooker for \$124.5 million in remedial work. The EPA explained that the actions against Hooker involved: (1) litigation under “imminent hazard” provisions of existing EPA laws, and (2) the creation of programs, financed by government and industry, to clean up hazardous waste sites. EPA administrator Barbara Blum described the imminent hazard litigation as follows: “This program seeks to halt dangerous disposal practices and to force privately funded cleanup. This approach gets results, of course, only where a responsible party can be identified and has adequate financial resources to carry some or all of the cleanup costs.”

Blum also detailed the specific statutes under which the EPA was acting and discussed the EPA’s collaboration with the Justice Department in enforcing the statutes:

Sections of the Resource Conservation and Recovery Act, Safe Drinking Water Act, Toxic Substances Control Act, Clean Water Act, and Clean Air Act all authorize EPA to ask the court for injunctive relief in situations which pose threats to public health or the environment. Section 309 of the Clean Water Act levies a penalty of up to \$10,000 a day for unpermitted discharges to navigable waters (a leaking dump can be considered a discharge)....

People are frightened by Love Canal and by the emergence of threatening hazardous waste sites in their local communities. They are demanding action—and they are getting it.

The EPA has estimated that only 10 percent of all hazardous wastes are disposed of in strict compliance with federal regulations. According to Thomas H. Maugh II, “nearly 50 percent is disposed of by lagooning in unlined surface impoundments, 30 percent in nonsecure landfills, and about 10 percent by dumping into sewers, spreading on roads, injection into deep wells, and incineration under uncontrolled conditions.” Maugh argues that “legal dump sites gone awry” are a lesser problem than the growing problem of illegally dumped wastes in unsecured dump sites, often in the middle of cities. In October 1981 the EPA announced that “there are at least twenty-nine toxic waste disposal sites around the country as dangerous or more so than Love Canal.”

HOOKER’S DEFENSE AGAINST THE CHARGES

Hooker Chemical believes that its role and position have been misunderstood. Although the company neither denies using the canal as a chemical dump nor denies that the dump has created a serious problem,

company officials contend that (1) the company's efforts to prevent first the public and then the canal area private development are generally unrecognized; (2) the company has been an industry leader in safety; (3) Hooker is being unfairly singled out for waste disposal practices that were then almost universal throughout the chemical industry; and (4) a certain level of risk is an inevitable hazard in an industrial society.

Hooker has marshaled data to support these contentions. In the first place, Hooker believes that its efforts to warn the school board and city against interfering with the waste disposal area have gone unappreciated. When the Niagara Falls School Board expressed an interest in selling a portion of the Love Canal tract to a developer, Hooker representatives argued against the plan in a public meeting and later reiterated to the board the possible hazards of developing the site. When the school board persisted in its plans and began to obtain adjacent parcels of land through condemnation proceedings, Hooker, in the school board's deed, again referred to the property's past use and stipulated that all future risks and liabilities be passed to the school board.

One part of the deed stipulated that

prior to the delivery of this instrument of conveyance, the grantee herein has been advised by the grantor that the premises above described have been filled, in whole or in part, to the present grade level thereof with waste products resulting from the manufacturing of chemicals by the grantor at its plant in the City of Niagara Falls, New York, and the grantee assumes all risk and liability incident to the use thereof. It is, therefore, understood and agreed that, as a part of the consideration for this conveyance and as a condition thereof, no claim, suit, action or demand of any nature whatsoever shall ever be made by the grantee, its successors or assigns, against the grantor, its successors or assigns, for injury to a person or persons, including the death resulting therefrom, or loss of or damage to property caused by, in connection with or by reason of the presence of said industrial wastes.

When the school board later sold part of the land to a private developer who planned to build houses, Hooker officials protested the sale both verbally and in writing. Executives contend that the company has been unjustly blamed for others' imprudence. Hooker also claims that it has no legal responsibility for the Love Canal problem and that it has more than met its social and moral obligations in time and money spent on the cleanup effort. Through its Love Canal experiences, Hooker environmental health and safety specialists have developed knowledge and skills that have enabled the company to take a leadership role in problems of underground pollution.

Hooker officials also argue that their past practices satisfied and even exceeded the then-operative industry standards for waste disposal. During the 1942 to 1953 period, when Hooker filled Love Canal with barrels of chemical wastes, neither the industries involved nor the health and regulatory professions recognized the long-term environmental and personal hazards of these industrial "leftovers." Storing the chemical wastes in a clay canal at the time represented

an improvement over common methods of disposal in unlined and unsecured landfills.

The company's defense of its behavior in the Love Canal situation parallels in some respects the reaction of certain Love Canal residents. They directed the major thrust of their antagonism not toward Hooker Chemical, but toward the New York State Health Department, which had failed both to provide open access to the results of state-conducted health studies and to admit in a timely and responsible fashion that a health problem existed. The health department attempted to discourage and in fact actively thwarted independent researchers whose reports indicated more widespread risks to the community's health than the department was willing to admit or was prepared to pay to rectify. Given these premises, these residents have concluded that the health department, not Hooker Chemical, failed to meet its obligations to the community.

Hooker supports the common industry position that society will have to learn to accept a certain level of risk in order to enjoy the products of industrial society. Environmental hazards are one form of industrial "trade-off." Industrialists cite persons such as Margery W. Shaw, an independent scientist who reviewed a chromosomal study of Love Canal residents. She pointed out that the need to determine a level of acceptable risk is indicative of a more general societal problem:

In our democratic society, perhaps we will decide that 500,000 deaths per year is an acceptable price for toxic chemicals in our environment, just as we have decided that 50,000 traffic deaths per year is an acceptable price for automobile travel. On the other hand, we may say that 5,000 deaths per year is an unacceptable price for toxic chemicals.

THE CONTINUING CONTROVERSY OVER HOOKER AND THE CANAL CLEANUP

Over the years, Hooker has been among the most heavily criticized corporations for its environmental policies. Ralph Nader attacked Hooker as a "callous corporation" that has left toxic "cesspools." An ABC news documentary that focused on the increased incidence of disease at Love Canal harshly criticized the company. Nonetheless, Hooker has won a number of defenders. A *Fortune* magazine editorial defended the corporation for having explicitly conformed to government waste disposal standards, for resisting the canal area construction, and for being the victim of exaggerated and irresponsible reports about the regional incidence of disease. A *Discover* magazine editorial laid the blame for the Love Canal on the school board (but argued that Hooker did act irresponsibly in waste dumpage at a number of other sites). The 1982 EPA study blunted some federal efforts and some lawsuits.

In 1983 the U.S. Centers for Disease Control (CDC) conducted a study of Love Canal residents. The CDC examined 44 residents and compared them to a control group chosen from Niagara Falls residents living at least one mile from the evacuated area. The CDC concluded that residents of Love Canal do not show increased incidence of cancer or reproductive abnormalities when

compared to residents of other Niagara Falls neighborhoods. CDC critics claim the study was too small to be conclusive. Health officials and state legislators called for more conclusive information.

Amidst the controversy, Niagara Falls city officials had a list of more than 100 families from the Love Canal neighborhood that were waiting for housing. Many people eagerly awaited the final word on Love Canal's conditions. Although the 1982 EPA study contended that adjacent neighborhoods met safety requirements, New York state health officials reported that they found dioxin (one of the world's most toxic chemicals) at levels eight times higher than the lethal dose. The U.S. Office of Technology Assessment undertook an evaluation of all available evidence, but its report shed no additional light on the conditions at Love Canal. It stated that "with available information it is possible either that unsafe levels of toxic contamination exist or that they do not exist."

Voles (field mice common to the Love Canal area) were the subject of another 1983 study. The mice were ideal for the study because they are sedentary, rarely moving appreciable distances. The number of voles found living in the canal area was less than in the control area, which was one mile from the canal. Mice living near the canal evidenced liver damage. Life expectancies varied significantly. Whereas a vole in the control area would be expected to live 100 days past the 30-day mark, any vole in the canal area that reached an age of 30 days could only be expected to live an additional 54 days. The life expectancy thus was cut in half for those mice living near the canal.

Another study of live birth weights of children born to Love Canal women has also provided cause for concern. Children born to women who lived near chemical swales had significantly lower birth weights in the years 1940-1978 than the state average. A swale is a natural low area along water drainage pathways where chemicals might collect. Several drainage pathways pass through the Love Canal region. Researchers found that 12.1 percent of the children born to women who had lived near one of the swales showed lower than average birth weights as compared to a 6.9 percent average for the state of New York (excluding New York City).

Citizens and health officials mobilized in an attempt to force the cleanup of Love Canal and keep area inhabitants informed of new findings and projects. Local citizens grew weary of the problems and demanded a more rapid cleanup. A complex cleanup project began in the spring of 1987 with the dredging of three local creeks. The site, which had remained covered with plastic sheeting and earth, was uncovered. Officials began to dredge dioxin-contaminated mud and tainted sediment from the creeks. The creeks were dewatered, and waste was removed. The EPA and the State Department of Environmental Conservation stored the wastes in a temporary landfill and storage facility near the site.

Citizens opposed the storage, fearing that it would delay possible rehabilitation of the area. They charged the EPA with negligence and undue delay. In October 1987 the EPA announced plans to complete the cleanup. The

EPA planned to incinerate the stored wastes at an expected cost of \$26 million to \$31 million. The incineration process, though costly, is considered a permanent solution. Buried wastes or other disposal methods, such as deep well injection, are considered hazardous. A Technical Review Committee (TRC) oversees testing of Love Canal air and soil samples and will compare its findings to those from other neighborhoods. The TRC also develops criteria for making final Love Canal resettlement decisions. Under the TRC plan, parts of Love Canal will be converted to a reforested park.

In February 1988 a new court decision altered the circumstance of legal liability for Love Canal. Federal Judge John Curtin of the U.S. District Court for the Western District of New York ruled that Occidental Petroleum Corporation's chemicals unit is responsible for the costs of cleaning up Love Canal—costs estimated at \$250 million. This decision was made under the 1980 Superfund Act, the federal program to clean up the nation's most polluted environments. Curtin found Occidental "at least partially responsible" for the initially inadequate storage and for leakage that has occurred over the years. Occidental argued in the case that the city of Niagara Falls was solely responsible for release of the toxic wastes because city officials ignored warnings about the site and then disrupted its hydrology. But Judge Curtin rejected this "third-party defense" because Hooker Chemical had brought the wastes to the site. New York State Attorney General Robert Abrams said that the judge's opinion constituted "a tremendous victory for the state and federal governments and a resounding defeat for Occidental's strenuous and expensive public-relations campaign to shift the entire blame for Love Canal to the city of Niagara Falls, the board of education, the state of New York, and even the people who were forced to abandon their homes."

In 1992 Occidental again tried to claim that the federal government was partially at fault for the Love Canal disaster. The company attempted to prove that the Army had dumped toxic wastes at Love Canal and then destroyed the relevant records. Although the Justice Department has denied such claims, Occidental insists that the Army dumped approximately 4,000 tons of chemicals at Love Canal.

The 1988 case that found Occidental the sole party responsible for the clean-up of Love Canal did not come to closure until June 21, 1994, after the settlement of various countersuits. On March 17, 1994, the federal court decided not to hold Occidental responsible for punitive damages. *The New York Times*, quoting Judge Curtin, who was still presiding over the case, said "that while Occidental was negligent 'on a number of occasions,' the state failed to prove that the company acted with 'reckless or wanton disregard of safety or rights,'" the standard he said was necessary to assess punitive damages. This decision does not affect the previous 1988 ruling. In June 1994, after the long awaited out-of-court decision, Occidental agreed to pay New York State \$98 million for damages and expenditures and to take full responsibility for cleanup work. The state estimates that the cleanup charges will be approximately \$22 million, but Occidental put the value at only \$8 million. Whatever the precise figure, G.

Oliver Koppel, the state attorney general, said, "the settlement was by far the largest in state history." Occidental views the June decision as a vindication of its actions at Love Canal, because the company was cleared of wrongdoing. The chairman of the Chemical Manufacturers Association argued further that the decision sets a precedent that chemical companies cannot be held responsible for waste disposal practices that were appropriate at the time: "You cannot judge people or a company based on today's standards or knowledge for actions taken 40 to 60 years ago," he said.

The effects of the Love Canal decision extend beyond the realms of New York State and the Occidental Chemical Company. Love Canal has become an example of how slow and costly cleanup of Superfund sites has become. Because of the attention raised by Love Canal, in 1994 the Clinton administration proposed an overhaul of the 14-year-old Superfund program. The purpose of this overhaul was to redefine the criterion of a "clean" site so that government programs would not recognize or permit different standards of cleanliness. Love Canal suggests to many that a flexible standard is problematic because, over the course of many years, property can change hands and be used for a variety of purposes, each falling under a different standard of "clean." For this reason, the Clinton administration has insisted on implementing a definition of cleanliness that can apply to all waste sites.

CONCLUSION

In May 1990, Environmental Protection Agency Chief William K. Reilly announced that the government had opened the Love Canal neighborhoods for resettlement. After a 12-year, \$250 million cleanup, the EPA concluded that four of the area's seven districts were habitable. The other three could be converted to park land and industrial areas. Sixty of the area's 2,500 original residents remained through the years of turmoil. On August 15, 1990, the planning director of the Love Canal Area Revitalization Agency, James Carr, placed 236 houses on sale, at 20 percent below market value. Armed with a list of over 200 eager potential Love Canal home buyers, Carr predicted that the area would quickly regain residents.

He was right. In 1992 the Federal Housing Administration started offering mortgages when banks declined involvement. This allowed 100 eager buyers to afford new homes. Success in sales allowed the houses' discount to be reduced to approximately 15 percent below market value. Kenneth Denman, the sole sales agent for the Love Canal Area Revitalization Agency, said that "no sooner were the words 'Love Canal' back in the news than the sales office for [the agency was] jamming up like a Tokyo subway." Given the enormous government cleanup and protection programs, Love Canal's environmental dangers appear to have been eradicated; as Carr has argued, "A child runs far, far greater health risks if his parents smoke or drink than he does living in Love Canal." Nevertheless, many observers remain skeptical.

Love Canal, now changed in name to Black Creek Village, has a state-of-the-art containment system, with two three-foot-thick caps over the dump site.

The authorities razed the roughly 240 houses nearest the site and enclosed the entire area within a chain-link fence. Home buyers ready to reinhabit Love Canal have put their faith in the cleanup process, despite environmentalists' continuing fears, which spring from inconclusive studies and uncertain conditions. One environmentalist, National Resources Defense Council attorney Rebecca Todd, commented, "Love Canal is a ticking time bomb." Lois Gibbs, who in 1970 led the evacuation of residents from Love Canal and in 1994 was the director of the Citizens' Clearinghouse for Hazardous Waste in Washington, has never waned in her opposition to the resale of homes in the area. Gibbs argues that the attempt to move people back into Love Canal is "a matter of the state trying to cover up Love Canal and pretend that it didn't exist, pretend like it was not a threat."

The state and federal governments continue to assure new and potential residents that the area is habitable. Reports of tests run on neighborhood soil, air, and houses indicated that "this section of Niagara Falls was no more polluted or toxic than other parts of the city." However, critics are quick to point out that no tests were conducted on former residents since 1983. Skeptics wonder why, if health concerns were the major reason to evacuate in the first place, no one has followed up on their health 15 years later.

Despite the court cases, lawsuits, and cleanup responsibilities, uncertainty remains regarding safety and health risks, as well as the correct causal explanation of disease. As one former Love Canal resident puts it, "We'll still have the same question: Is it [a disease] because I live in Love Canal? Or is it not? Because those questions have never been addressed."

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