

AGENT ORANGE

In Vietnam, the U.S. dropped 350 pounds of Agent Orange's deadliest ingredient. Today, there's a full ton buried in upstate New York.

By Robert Rickles and Harold Holzer

FOR EIGHT YEARS OF the Vietnam War, American soldiers used a weapon called Agent Orange. A powerfully corrosive chemical defoliant, Agent Orange destroyed thousands of acres of Southeast Asian vegetation and agriculture—permanently.

Since then, many of the servicemen who handled Agent Orange have been claiming, in and out of court, that their own contact with the defoliant has caused them serious health problems. In fact, Agent Orange became a key issue during the recent trip to Hanoi by the Vietnam Veterans of America. So critical is the problem viewed both here and abroad that the vets won permission for American scientists to visit Vietnam to study the effects of Agent Orange's fallout on the Communist nation's populace.

The scientific task force wants to discover, once and for all, what the most dangerous ingredient in Agent Orange—the chemical dioxin—does to the human body. According to David Weir, coauthor of *Circle of Poison*, dioxin is "one of the most fiendishly toxic substances known." (See box, page 12.)

But while attention is focused on Vietnam for these elusive answers, the Agent Orange catastrophe threatens to recur at home, in a small area of northern New York State near Niagara Falls. There, at Hyde Park, on a sixteen-acre chemical dump site, an American corporation has buried a full ton of deadly dioxin—a quantity six times greater than the amount dropped on Vietnam.

Worse yet, recent evidence indicates that what was plowed under beginning almost thirty years ago may now be resurfacing, posing a major health hazard to local residents in the form of dioxin seepage into ground water and bedrock. It also poses great danger to an additional 5 million people via seepage into the nearby Niagara Gorge, which feeds fish-laden Lake Ontario.

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Experts say that this toxic time bomb's potential to poison is so great it could yet make Love Canal look like a poison-ivy epidemic by comparison. Not surprisingly, the company behind the Hyde Park dump is the very same firm that filled Love Canal with toxins—Hooker Chemical Corporation.

In fact, the Hyde Park landfill is the site Hooker used to dump hazardous chemicals after its Love Canal site was filled. In all, Hooker dumped some 80,000 tons of dangerous chemicals into Hyde Park between 1953 and 1974. In addition to 2000 pounds of dioxin, such carcinogens as trichloroethylene, monochlorobenzene and hexachlorobutadiene were also buried there. In terms of both area and volume of material, Hyde Park now constitutes one of the largest concentrations of dangerous chemicals dumped in any single site on the earth.

During the past two years, the federal Environmental Protection Agency (EPA) and the state of New York have very quietly negotiated an agreement with Hooker to clean up Hyde Park—assuming it is not already too late. Yet the final accord would limit the financial liability of Occidental Petroleum, Hooker's parent company, to a maximum of only \$10 million. Independent studies suggest that it will cost from \$150 million to \$250 million to clean up the dump.

For these reasons, local groups like Pollu-

tion Probe of Canada and the Ecumenical Task Force of the Niagara Frontier have been fighting the proposed settlement in court. According to Toby Vigod, one of the participating Canadian attorneys, the deal is "dangerously inadequate" to meet the Hyde Park threat to health and safety. The groups are demanding a revised cleanup plan. Though the case is still pending, it has the potential to become one of the landmark environmental decisions of our time.

STRANGELY, THE HYDE PARK time bomb received very little attention from press or public until 1978, and then quite by accident. Prior to 1978, cursory inspections by the Niagara County Health Department and the New York State Department of Environmental Conservation suggested there was very little wrong that could not easily be cured. They called for such controls as modest drainage systems, but little else.

It was in 1978 that Occidental sought to acquire the Mead Corporation, a paper producer. Among the efforts Mead undertook to ward off the unwanted merger (it was ultimately successful in evading the takeover) was to evaluate and publicize Occidental's potential liability to lawsuits and cleanup expenses relating to its Hooker subsidiary. In the course of this effort, Mead retained several consultants to examine

Hooker's landfill sites around the country. It was then that Hyde Park was uncovered and the suggestion first raised publicly that the site might be contributing to the pollution of the Niagara River and Lake Ontario.

It was only after Mead issued its reports that the EPA began a civil action against both Hooker and the state of New York, seeking remedial action for the now closed landfill. At last, Hyde Park would be cleaned up. Quickly, the state switched sides from defendant to plaintiff and joined the government in the action against Hooker in 1979.

After two years, in early 1981, a settlement was reached. It proposed the following remedies: • Placing a watertight clay cap over the landfill • Installing a fifteen-foot tiled drainage system around it • Installing a series of wells, fifteen feet into bedrock, on the west side of the landfill to drain contaminated ground water before any more could reach the Niagara Gorge a mile away • Employing "requisite remedial technology"—any hi-tech solutions meeting certain criteria that might later be discovered • Stipulating that the cost would be borne by Hooker and backed up by the cash-rich Occidental Corporation. The settlement further said that acceptance of this agreement would absolve Hooker from the costs of any future cleanup that might be deemed necessary.

"It was not an easy case," concedes Charles S. Warren, the former regional administrator of EPA. "But you can always say you can do better. In my experience, when you aspire to do a perfect job, nothing gets done. This one had the potential to drag on for many years. Had we taken it to court, the government might not even have prevailed. And while all that went on, there would have been no abatement at all. Now Hooker is finally committed to doing something."

Nonetheless, it was the publication of the out-of-court settlement that triggered the involvement of American and Canadian citizens groups and environmental organizations in an unusual joint challenge in the courts. Their challenge has resulted in a full hearing for the case in federal court in nearby Buffalo, and legal observers say Judge John Curtin could conceivably throw

out the Hyde Park cleanup settlement.

Among the groups who asked for and received status as *amici curiae* (friends of the court) in the case was the Ecumenical Task Force, a coalition of local church groups originally set up to deal with the short-term effects of natural disasters. Two Canadian groups—Operation Clean-Niagara and Pollution Probe—won status in the American court by arguing that Canadian waters were endangered by the settlement.

Barrister and solicitor Toby Vigod, whose Toronto law firm specializes in environmental cases, notes: "This is the first case with which we've been involved in New York State. It's rare for Canadians to get status in your courts, but it's an excellent precedent. It's going to have repercussions in many environmental cases down the line."

Vigod says her goal is simple. "Our bottom line is to see the site excavated. This cleanup order doesn't go nearly far enough. It's a danger to the 4 million Canadians and the 1.5 million Americans living along the Niagara River and Lake Ontario—people who take their drinking water and their food from these sources."

Representing the Ecumenical Task Force, Buffalo attorney Barbara Morrison adds: "To put it simply, we are challenging a wholly insufficient cleanup proposal, one that would make no real impact on the dangerous conditions here."

The various groups quickly set about to prove their case. Conducting their own independent research, they discovered problems even more frightening than the dioxin contamination in the area. A study conducted by Grant Anderson, a prominent Canadian geologist, indicates that "the chemical wastes are resting on the very permeable Lockport Dolomite bedrock aquifer. . . . These contaminants will eventually reach the Niagara River."

Anderson's warning was delivered in June 1981. By September, scientists retained by the plaintiff had taken samples of leakage from the gorge itself and found high concentrations of the very chemicals that had been stored in Hyde Park a mile away beginning twenty-nine years ago. Barbara Morrison says, "This was clear evidence that the pollutants were reaching the river—and could never be stopped by the well formations proposed in the settlement."

Morrison and Vigod even charged that Hooker was aware of this infestation but that "the hazard was never presented to the court or public."

Perhaps most significant—and frightening—of all was the discovery of high levels of dioxin in herring gulls roosting in Lake Ontario, as well as in the lake water and fish. The *amici curiae* warned of a "discharge of at least 8000 tons of highly toxic chemicals over time." What would that mean? What, precisely, can dioxin do to living creatures?

Using Rhesus monkeys, Dr. James R. Allen, a toxicologist and pathologist, conducted tests on dioxin and concluded that the substance was "an extremely toxic compound producing a variety of effects, including hair loss, facial swelling, thickening of the stomach wall and anemia. Eventually the animals died in direct relation to the amount ingested." Experimenting with female mon-

AGENT ORANGE: WHAT IT IS AND DOES

FROM 1962 TO 1970, A DEFOLIANT was sprayed over 5 million acres of Vietnam in a campaign called Operation Ranch-hand. Its purpose was to eliminate vegetation used as camouflage by the Viet Cong and to destroy the enemy's crops and food supplies. The name given to this herbicide was Agent Orange. Chemists know it as 2,4,5-trichlorophenol, or 2,4,5-T.

The danger of 2,4,5-T lies in a by-product of its manufacture—tetrachlorodibenzoparadioxin, or dioxin. Dioxin is an insidious contaminant said to be one of the most toxic substances known to man; its toxicity is so high that it is measured in parts per trillion rather than parts per million. Some experts say that if three ounces of dioxin were spilled into the New York City water supply, it would be fatal to the entire city's population.

Dow Chemical Company is the major manufacturer of 2,4,5-T in the United States. Though Dow officials have maintained that the herbicide is "not significantly hazardous to human or animal life,"

experiments conducted on laboratory monkeys at the University of Wisconsin have demonstrated that minuscule amounts of dioxin can cause hemorrhaging, hair loss and miscarriage.

The effects of dioxin on humans have been documented by veterans who were exposed to Agent Orange in Vietnam. Among the symptoms that have been reported are skin lesions, swollen liver, numbness of the extremities, reduced sex drive and personality disorders. After continued pressure from those men who fought in Vietnam, the Veterans' Administration has ordered a full-scale epidemiological study on its effects.

Although 2,4,5-T was used in the United States as an herbicide for more than thirty years, by 1979, the Environmental Protection Agency had suspended its use in most cases after reports of ill effects on farmers and animals. However, the herbicide can still be used to dust rice crops and rangelands and to clear vegetation from airport runways, vacant lots and the like.

—DIANNE RIPLEY

keys, Allen discovered "irregularities in their menstrual cycles" and "a general alteration of the reproductive cycle."

Attempting to breed the exposed monkeys, Allen found only one of eight able to conceive and maintain full-term pregnancy. In an affidavit filed in federal court, Allen concluded that "extremely low levels of exposure . . . produce morbidity, mortality and reproductive abnormalities."

Needless to say, EPA responded with scientific data of its own to support the settlement. The firm of JRB Associates of McLean, Virginia, had been retained by the EPA to review hydrogeological data supplied by Hooker. Dr. David Twedell, an employee of JRB, was to interpret this data and help the EPA develop its strategy in negotiations with Hooker concerning the cleanup. Twedell, it turned out, was neither the Ph.D. nor the hydrogeologist he claimed to be before the court. He held only a bachelor's degree in physical science.

Twedell's employers were embarrassed enough to issue an official statement, insisting that the role he performed was "subject to a close and repeated scrutiny by more senior scientists" and thus "[did not] jeopardize the accuracy of the findings."

EPA was less forgiving, moving in court that Twedell's testimony be stricken. But in a surprise move in early December, Morrison argued that "the federal government should have to live with the record they created." EPA, she says, had insisted the court assume his "official expertise" more valid than that of *our* experts. So let his brief stand. . . . It's a clear case of the emperor having no clothes."

And Toby Vigod adds: "It's scary. It shows that there was no expert on EPA's side of the negotiating table who could keep up with Hooker's experts. So how much can the settlement agreement mean?"

The court is expected to rule soon. Judge Curtin has narrow jurisdiction; he must either issue a decree approving the agreement

or reject it, a move that would send the parties back into negotiation—or trial.

A decision to throw out the settlement would have enormous impact on current—and anticipated—negotiations with private industry over the degree of corporate responsibility for unchecked chemical dumping. Says one federal environmental official: "They could become subject to huge court settlements ordering site cleanups at levels much higher than our own EPA has been willing to impose. The Hyde Park judgment could signal, once and for all, the idea that industry will have to pay to clean up what they dump across our countryside."

Hooker has indicated that if Judge Curtin rules against the agreement, it would refuse to negotiate further, making a trial likely. "Hooker will not be voluntarily associated with any remedial effort that includes such a plan," Hooker's attorneys testified last summer. Frank Neruda, Hooker's vice-president for special environmental programs, has insisted: "These proposed actions [the negotiated settlements] represent the results of some of the best technical resources inside and outside of the company and fully and effectively meet our goals."

But not the goals of the challengers. They insist that the only solution that will safeguard public health would be total excavation—a measure Hooker is already implementing at a far smaller landfill in Montague, Michigan—followed by high-temperature incineration of the organics. They admit that this solution, or even a less drastic one calling for many more and far deeper wells to capture more ground water, would cost hundreds of millions of dollars. "This is one of the points we're trying to make," Toby Vigod contends. "What if Hooker goes bankrupt during the cleanup? All we're left with is a \$10 million guarantee from Occidental for a cleanup plan we know time will show to be inadequate. That would leave U.S. and state taxpayers on the hook."

Vigod and her environmentalist clients concede that they are at best underdogs in the long fight against the agreement. "The fact is, Hooker is a powerful company," she says. Indeed, backed by an army of highly paid consultants, attorneys and scientists, Hooker has a history of overwhelming government challenges. Now that the government is on its side—at least in defending the Hyde Park settlement—Hooker seems unbeatable, especially with a conservative administration in Washington. It has not gone unnoticed by the Hyde Park litigants that the chairman of Occidental is Dr. Armand Hammer, a longtime acquaintance of President Reagan and currently the chairman of his White House Cancer Panel. Skeptical environmentalists wonder whether the carcinogenic potential of dioxin will be among those hazards studied by the Hammer panel.

Adding insult to injury, in late October the EPA issued a list of what it termed the most dangerous dump sites in America—2114 of them slated to receive "the highest priority" for cleanup under the Reagan administration's new EPA "superfund."

Incredibly, Hyde Park was left off the list. Says Hugh Kaufman, EPA's chief hazardous-waste investigator: "It's clear to anyone who knows the severity of the problems out there that some kind of games were played in compiling this list. There's no other plausible explanation."

"The Hyde Park landfill," he continued, "has the potential to be one of the most dangerous sites in the world, with enough dioxin to wipe out millions. But it wasn't on the list at all. I can't imagine what information they based the list on."

An EPA spokeswoman, Elaine Stanley, could explain only that a "hazard scoring model" had been employed to evaluate 281 nominees and "Hyde Park simply didn't score high enough."

Reflecting on the change of administration in Washington, critics of the Hyde Park settlement meanwhile wonder aloud how sympathetic a Reagan-run EPA will be, even if the court orders the government back to the negotiating table with Hooker. "It's a risk, dealing with an administration that doesn't consider Hyde Park one of the 114 worst landfills," Toby Vigod concedes.

Indeed, from all reports, EPA is cutting back—initially, by reducing staff up to fifty percent in Washington, to be followed by commensurate cuts in the field. Such cuts cannot help but cause a reduction in enforcement as well, critics contend.

So even if the challengers win their court case, there is serious question about how much better a settlement Reagan-appointed negotiators can win if the parties are ordered back to the bargaining table. Conceivably, then, a court victory could be rendered almost meaningless. "We'll just have to wait and see," Toby Vigod says.

Not too many weeks ago, a report out of the University of Illinois Medical Center suggested that scientists may have discovered a strain of bacteria that counteracts dioxin. For the herring gulls, the fish and the 5.5 million people waiting for the Hyde Park time bomb to explode, the unlikely possibility that a miracle cure is really at hand may be the best—and last—hope.