Toxic responsibility:
The U.S. military's problems of toxic waste disposal are as great as those of industry.

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BENEATH THE PEACEFUL majesty of the snowcapped Rocky Mountains an ungainly foothill has arisen. The newly constructed mound is sixteen acres across and several stories tall, built of the solid residue of a lagoon of toxic sludge called Basin F. In contrast to the striking beauty of the surroundings, the land around the Basin F site is the centerpiece of what many experts claim is the most toxic square mile on earth. The owner of this hopelessly polluted real estate and the twenty-six square miles that surround it is the U.S. Army.

David Strang, who has worked at the Army's Rocky Mountain Arsenal for sixteen years, now presides over the technical-operations division of the Army's cleanup program for the site. The cleanup of Basin F began last summer, when workers pumped 4 million gallons of deadly aquamarine liquid from the lagoon into three vast tanks on the edge of the basin and piled the remaining contaminated residue into the new mound, to be topped with clay, Both the tanks and the mound will remain as they are until 1993, when a decision will be reached on how to decontaminate them. According to Strang, the mixture of toxic chemicals in Basin F makes decontamination costly and complex. Perhaps an even bigger obstacle, however, is a continuing legal battle over how the cleanup will proceed, fought by the Army, the State of Colorado, and the Shell Oil Company, which leased the arsenal's facilities from the early 1950s to the early 1980s to make pesticides. As we drove past Basin F not long ago, Strang made a sweeping motion out the window and said that it is "not really the level of contamination so much as the quantity involved" that earns the arsenal its place among the world's most contaminated properties.

In fact, the arsenal is home to about 16 million cubic yards of contaminated soil-four decades' worth of dumping of some of the most toxic substances known, including byproducts from the production of mustard gas and nerve gas. Colonel Wallace Quintrell, the head of the cleanup program and Strang's boss, acknowledges that "there are contaminants found at the arsenal that are not found anywhere else."

Strang says that no military activity is under way at the arsenal, nor has any been for years. "Nothing's happening here," he said as we passed the faded factory complex where the nerve gas GB was produced in the 1950s, and again as we made our way past the crusty, burnt-looking land that stretches for acres in the now empty Basin A (adjacent to Basin F), where millions of gallons of toxic wastes were dumped in the 1940s. Unfortunately, Strang's refrain doesn't hold true belowground. There a toxic plume almost the size of the arsenal itself seeps inexorably northwest, contaminating the groundwater of towns just outside Denver.

Most people associate the problem of toxic waste with multinational industrial giants like Union Carbide, Exxon, and Monsanto. But with thousands of toxic sites around the country and around the world, the U.S. military ranks among the world's largest generators of toxic waste. Recent disclosures of environmental contamination and neglect at the Department of Energy's domestic nuclear-fuel production facilities have brought attention to the problems posed by the construction and maintenance of nuclear weapons. Less well known is the extent and unruly nature of the military's non-nuclear toxic-waste problem. Military nuclear toxic waste, serious as it is, affects relatively few sites. The chances are great, however that there is a military non-nuclear toxic-waste site near where you live.

GIVEN THE SIZE of the Rocky Mountain Arsenal's toxic-waste problems, it is not surprising that the arsenal was one of the first military installations to be placed on the Environmental Protection Agency's Superfund National Priorities List. To date twenty-nine military installations under the jurisdiction of the Department of Defense have been listed and twenty-three more proposed. The addition of government-owned facilities to the list of the nation's foremost toxic dump sites is the result of 1986 amendments to the Superfund law designed to address the federal government's toxic-waste problem. Once listed, sites become subject to the EPAs regulatory requirements, even though the agency's ability to enforce those requirements remains in dispute. The Department of Defense is required to pay the costs of cleanup. .

Now that the Superfund list must include military sites, the list will undoubtedly grow. The EPA has already drawn up a docket of federal installations with potential hazardous-waste problems. Over half the more than 1,000 such installations are at military facilities, split fairly evenly among the Army, Navy, and Air Force.

Even these efforts by the EPA to increase its oversight of hazardous-waste cleanup at federal facilities do not yet take into account the full extent of toxic contamination at military bases around the country. That is the aim of the Pentagon's own version of Superfund, the Defense Environmental Restoration Program, which was established, at least in part, to preclude interference by outside agencies at sometimes sensitive military installations. To date the program has identified 5,700 sites of potential contamination, at 819 bases. So far, the military reports, only 140 sites, or less than three percent of them, have actually been cleaned up, although action is planned or has begun at another 1,800. These figures ignore potential toxic contamination at the hundreds of U.S. military bases overseas, and the many military (and Department of Energy) sites contaminated with radioactive wastes. And the Defense Department has barely begun to look at the potentially larger problem of toxic contamination on property formerly owned by the military. The Pentagon estimates that 10 percent of the more than 7,200 such sites identified to date will need to be cleaned up. Needless to say, all this activity will prove costly to U.S. taxpayers,

The Pentagon's most recent estimate is that the Defense Environmental Restoration Program will cost $11 billion to $15 billion over the next twenty-five years. But cost estimates for the Rocky Mountain Arsenal cleanup alone start at $700 million and rise into the billions. Michael L. Synar, a congressman from Oklahoma, whose subcommittee has held oversight hearings on

the subject for several years, thinks that the total cleanup bill for all Defense Department sites may be as high as $20 billion.

All the armed services use a wide array of toxic compounds in the course of their operations. "Military bases are really very, very large industrial facilities or manufacturing plants that use lots of solvents and paints," J. Winston Porter, an assistant administrator at the EPA, says. For example, tanks and airplanes are washed with cleaning compounds and solvents; these are often simply drained onto the ground or into ditches. Among them is trichloroethylene, the Air Force's widely used but carcinogenic "miracle solvent." Maintenance work, including painting and stripping, generates a variety of wastes, including toxic oils, solvents, paint strippers, thinners, and sludge. Electroplating shops, where certain kinds of metal parts are repaired, generate cyanides, acids, and heavy metals.

Of course, some pollutants are unique to the military. Bombs are packed with chemicals like RDX, an experimental explosive compound that has leached into the groundwater at six of the military bases that have been placed on the Superfund list. Indeed, in the manufacture, maintenance, and "demilitarization" of ammunition and explosives, toxic substances are repeatedly introduced into the environment.

By the military's own account, in its 1988 annual. report on the problem, its disposal practices included "discharge on the ground into unlined pits . . . or local creeks,"pouring and spraying on the ground," "drainage to industrial sewers," "burning during fire protection training," and "storage in leaking underground tanks." The same Pentagon report calls these methods "the commonly accepted practices of the times." The list would make even the most callous private dumper blush. Duane Woodard, the attorney general of Colorado, who has been fighting the Army in court over the Rocky Mountain Arsenal contamination, testified before Congress that "the federal government has been one of the nation's worst violators of [federal] and state hazardous-waste laws." Anthony J. Celebrezze, Jr, the attorney general of Ohio, similarly attested to a "widespread and long-standing disregard by federal facilities of hazardous-waste requirements designed to protect the safety of our citizens."

YET ANOTHER frequently heard complaint is that the military takes an inordinate amount of time to admit to the problems, let alone do anything about them. One of the first military-toxics controversies arose at McClellan Air Force Base, near Sacramento, California. In 1979 Air Force officials found that drinking-water wells on the base were contaminated, but failed to fully inform the California Department of Health Services. Then the Air Force delayed in giving the state a report to indicate that the contamination had spread off the base, releasing it only after the state threatened legal action. Even then, cleanup lagged until the base was sharply criticized by the General Accounting Office and pressure was applied by angry members of Congress, state and local politicians, and neighbors. Despite some cleanup efforts to date, McClellan is now ranked among the hundred worst sites on the Superfund list.

Officials also failed to reveal contamination of drinking-water wells at the Cornhusker Army Ammunition Plant, near Grand Island, Nebraska. In 1970 the Army, aware of a problem at the plant, considered building a toxic-waste treatment facility. But even as late as the early 1980s the Army maintained

that it would take a century for the plume of toxic substances to reach the town boundary of Grand Island. After it found significant levels of off-site contamination in 1983, the Army waited nearly a year to make public the information that more than 500 private wells were extensively contaminated with the explosive compound RDX, at concentrations above 300 parts per billion. The safe level of RDX in drinking water, according to the military, is 35 ppb.

Chuck Carpenter, the founder of Good Neighbors Against Toxic Substances, which was formed in response to the contamination caused by the Cornhusker plant, recalls bitterly that when such high levels were found in initial tests of residents' wells, the Army refused to release the results-even to the people whose wells were tested. An Army spokesperson, Andrew Anderson, explained to reporters from the Sacramento Bee in 1984, "We just didn't want to excite the people out there until we knew what the readings were. We didn't want to get them overly anxious."

At Lakehurst Naval Air Engineering Center, in the Pine Barrens of New Jersey, the dumping of toxic waste was first disclosed, by civilian employees, in November of 1980, In 1983 the EPA found contamination in the part of the Cohansey aquifer that is beneath the installation. Most of southern New Jersey gets its tap water from the aquifer. A Navy report from March of 1983 showed that at least 3.2 million gallons of contaminated fuel and other toxic substances had been dumped since the 1950s. Despite measurements of groundwater at three sites showing the level of certain substances to be 10,000 times as high as the state considers safe, the Navy's report on the contamination was not made known to the public until August of 1985, after the press had independently investigated the contamination.

Asked about the Pentagon's history of withholding information concerning environmental hazards, Captain Michael J. Carricato, who oversees the military's toxic-cleanup program, replied that the public often mistakes caution for an unwillingness to share information. "It's our policy to share information as best we can when we know it, but to go through the process of doing a study takes time. We in the military tend to err on the side of working with the facts and not speculating, and that, at times, is hard for people to accept." Carricato added, "I don't know of any base commander today who is not aware of his responsibilities to safeguard the environment." Even Barry Breen, a former Army environmental lawyer who has often criticized the military's clean-up efforts, agrees, citing "a noticeable ratcheting up of the Defense Department's attention to the cleanup of its hazardous wastes."

Critics claim that even hard facts have often failed to persuade -the military to take corrective action, and they emphasize, furthermore, the Pentagon's disinclination to embrace federal and state hazardous-waste laws. "When we [the EPA] first started talking about these things," J. Winston Porter recalls, "there were some federal agencies saying that some environmental laws didn't apply." According to both Carricato and Breen, any attitude problems that may once have existed have been overcome. They maintain that the lingering problems in implementing the military's hazardous waste cleanup program are largely a result of the complexity of the laws and simple bureaucratic inertia.

The Pentagon and its critics disagree about the importance of oversight by

outside agencies. Carricato insists that the military "does not need to be repeatedly hit over the head with a big hammer to make us clean up," But others are skeptical. Representative Synar says, "At first federal agencies basically refused to admit that they were part of the problem. Then they were slow to comply with the requirements of the hazardous-waste laws. Now they are strongly resisting any oversight ftom EPA." Attorney General Celebrezze, of Ohio, rejects the notion of self-policing, under which federal agencies "have taken the position that they, and only they, have the authority to control the treatment, storage, and disposal of hazardous waste on federal land." Celebrezze has testified, "Persons who need account only to themselves have very little incentive to obey the law."

THE MILITARY'S reluctance to accept the EPA as a watchdog is only half the problem. The other half is the EPA itself. The inclusion of the first military sites on the Superfund National Priorities List was a small but significant victory for those who favor EPA oversight, because the Superfund sits clearly within the agency's jurisdiction. But Attorney General Woodard, of Colorado, and others, charge that the EPA is often lax in enforcing hazardous-waste laws against the Pentagon. Much of the time and energy that the EPA has devoted to the issue over the past year or two has been absorbed in feuding with the Justice Department, which has taken the position that the EPA does not have the right to sue agencies like the military services for noncompliance.

According to the Justice Department, disputes within the executive branch should not be resolved by lawsuits by one agency against another. Porter, of the EPA, initially disagreed, telling Congress, "We have the legal authority to issue administrative or compliance orders at federal facilities." But he now says, "While I would like to be able to issue orders unilaterally, that's just not provided for in the law." As Synar sees it, "Justice has basically tied Epxs hands."

Stripped of its authority to issue binding enforcement orders, the EPA has settled for negotiating voluntary interagency agreements under the auspices of the 1986 Superfund amendments. So far three have been signed, two with the Army, one with the Air Force. Critics hotly dispute the value of such agreements. Celebrezze has derided them as "toothless" and "worthless pieces of paper." Again, the key issue is enforceability. Early versions of these agreements did not include any enforcement provisions. Only later did the EPA include provisions that allow for legal action by third parties, such as states and citizens' groups, if appropriate cleanup steps are not taken. Porter says that the EPA has become tougher with the military on the issue of enforcement. "I don't think EPA would sign an agreement that didn't have enforceability language at this point," he says.

The Pentagon, however, is reluctant to admit that a need exists for inter agency agreements, let alone for "enforceability language." Carricato says,

"We can and should and do get things cleaned up without signing a piece of paper.

While the EPA and the Pentagon wrangle over interagency agreements, California, Colorado, Maine, Minnesota,
Ohio, and Washington have all brought lawsuits to force cleanups at federal installations. Phillip Rarick, an environmental lawyer for the National

Association of Attorneys General, believes that states "really have the enforcement leverage" today "In addition to federal laws," he says, "they have their own state laws and the common laws of nuisance, so they have a wider range of tools than EPA." Porter advocates a strong state role in federal-facilities enforcement, although he notes that his agency has "real coordination problems to work out with the states."

To Synar, though, the EPAs need to rely on states to do its job is an indication that the system has failed. "It's a sad situation," he says, "when state enforcement may be the only way we're going to get any action because our own Attorney General isn't going to do anything to protect the American people."

Almost all observers agree that the cleanup of military toxic waste is hardly a model of efficient interagency cooperation. Critics stress the need for closer public scrutiny of military hazardous waste practices, not only to improve the cleanup effort but also as an example for corporate polluters. Breen says, "Federal-facility compliance could be an important tool in environmental protection. Besides the actual environmental improvement involved, it could serve as an important symbolic and highly visible mark of the federal government's commitment to environmental concerns. "

Michael Synar puts it more bluntly. "We're demanding responsibility from private enterprise at record levels," he says, "and so we can demand no less from our federal agencies." The Pentagon and other agencies "have a responsibility to set an example," he says. "But if the last five years is any indication of what we can expect, we're in trouble."