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A toxic legacy abroad

The military has polluted in ways that would be illegal in the United States

By David Armstrong, Globe Staff, 11/15/99

Second of four parts

ADAPDAP, Philippines -- The midday sun is beating down on Nerissa Sagum-Agustin as she pauses on a dirt road in this distressed resettlement area to look at her list of the sick.

She points to the first name, five-year-old Abraham Taruc, and quickly finds his home, having been there many times to deliver medicine and accompany the family to the local hospital. The two-room cinder-block structure is cool and dark. Abraham's mother, Elvira, sits on the floor, the boy stretched across her lap, his head cradled in her arm. He stares at the ceiling with his mouth open, oblivious to the visitors who just entered.

There are many children like Abraham on the list carried by Sagum-Agustin, a nurse and community activist. They are unable to walk or talk. Their growth is stunted and their muscles refuse to coordinate. They suffer from spasms and seizures. Most are unable to eat solid food.

Abraham and hundreds of other children were born or raised at nearby Clark Air Base, which was abandoned by the US Air Force in 1991. After the Americans left, the former barracks became homes for families like Abraham's. They planted corn and rice in the fields that flow next to the long runways once used by American fighter jets, and tapped wells on the base for water.

What the families didn't know was that the land was contaminated with the residue of chemicals, insecticides, and hazardous waste generated by the Air Force, according to US government records and a study by an American engineering firm.

Unknowing mothers mixed their baby formula with water tainted by mercury, gasoline, and bacteria. For years, the residents of the former air base drank the water, used it to bathe their children and water their crops, never suspecting it may be the reason

why people were getting sick.

As countries like the Philippines begin to come of age environmentally, they are awakening to a toxic disaster at former and current US bases. Virtually no part of the world is untouched by environmental hazards generated by the US military. A recent Pentagon report cited environmental problems at bases in Greenland, Spain, Japan, Panama, Italy, Iceland, and the United Kingdom.

"There is not a [US] military base in the world that doesn't have some soil or ground water contamination. That is

just a given," said Gary Vest, the principal assistant deputy undersecretary of defense for environmental security. "I will stipulate there is contamination everywhere."

The environmental contamination is not just the result of historical neglect. It continues today in places like South Korea, where raw sewage flows untreated from US bases into local waters.

The military has polluted in ways that would be illegal and subject to criminal prosecution in the United States, according to records obtained by The Boston Globe. Several countries, ranging from key allies like Germany to the small island nation of Bermuda, are now demanding that the United



Elvira Taruc and son Abraham **ELVIRE TARUC** with her 4-year-old son Abraham in their home at the Madapdap Resettlement Center. Abraham has multiple infirmities suspected to be connected to contaminated water from Clark AFB. (Globe Staff Photo / Tom Herde)

States help pay for the environmental damage done by American forces.

US base commanders are required to adhere to the environmental standards of the host country, but in many cases there are no standards. And even in countries with strict environmental regulations, the United States has often ignored, or knowingly violated, the host country laws.

The consequences for polluting overseas have been few. At home, Congress has shown little interest in paying for the cleanups. The Clinton administration, which has prided itself on taking a hard line against polluters in America, has dismissed the complaints of countries like the Philippines out of hand.

Even if it wanted to pay for major cleanups overseas, the Pentagon has little discretion to do so unless given permission by Congress -- something that has happened only once in recent years. This year, the United States plans to spend only \$17 million on cleanups at foreign bases, or .001 percent of what it spends on base cleanups domestically.

"I think anyone discussing this could build a pretty good case for a moral obligation" said Vest. "If you accept that, you still have to contend with what you are allowed to do by the law. That is the overarching, fundamental question."

All's not well at bases

In the impoverished Philippines, once a vital Asian foothold for the US Air Force and Navy, the legacy of American military operations is detailed in the list of contaminants found in the wells tapped by the residents who moved into the former command center area at Clark. The list includes:

- Mercury, which can impair child development and is linked to nervous system disorders and kidney and liver disease, found at twice the accepted Philippine health level;
- Double the acceptable Philippine standard for nitrate, which is linked at elevated levels to "blue baby syndrome," a potentially fatal condition that results from restricted oxygen in the blood;
- Propylbenzene, a fuel byproduct, which is not allowed in the water supply at any level;

- The insecticide dieldrin, a product now banned in the United States, at amounts above Philippine health limits;
- Unsafe amounts of lead, and coliform bacteria, which indicates the presence of bacteria and other hazardous organisms.

The threat is spreading, with the contaminated ground water flowing away from the former base and toward overcrowded and destitute towns clustered around the sprawling facility, according to the Philippine government agency developing the base.

Contaminated water at the Clark command center is just one trouble spot. Military records highlight scores of toxic threats at Clark -- once the largest Air Force base outside the United States -- as well as at the former Navy base at Subic Bay, 65 miles to the west.

In 1997, a US environmental firm, Pennsylvania-based Weston International, found soil throughout Clark contaminated with jet fuel, benzene, pesticides, oil, and PCBs. In several cases, the study, commissioned by the Philippines, warned that the hazardous waste could migrate into the water supply.

Families who lived on or near the base suffer from a disproportionately high rate of many kinds of illnesses, according to a 1998 study by the Toronto-based International Institute of Concern for Public Health, which has been critical of military environmental practices. The study found that current and former residents of the command center area at Clark reported a high percentage of illnesses associated with the mouth, nose, throat, skin, and immune and nervous systems, as well as high levels of kidney disease and reproductive disorders.

The report called for an immediate cleanup of the base, saying the combination of exposure to toxic materials and poor living conditions was creating health problems.

"For this reason, improvement, remediation, and cleanup efforts should be addressed to these areas first," the study concluded. "If this is not possible, then evacuation... should be considered."

The true scope of the contamination at Clark and Subic, and the potential impact on nearby residents, may not be known for years. Many of the toxins left behind become more hazardous the longer people are exposed to them. And because much of the hazardous waste was buried in landfills or dumped

into waterways, there is a danger of the toxins flowing unseen into unspoiled areas.

As countries begin to assess the environmental damage at current and former bases, the problem of overseas pollution threatens to become a major financial and diplomatic liability for the United States.

There is growing resentment in the Philippines over the base contamination, and the country's Department of Foreign Affairs says the base cleanup dispute "continues to affect" relations between the countries. In September, the Philippine House of Representatives passed a resolution calling on the United States to clean up the sites.

But a cleanup would be expensive. The General Accounting Office, in a 1992 report, quoted military officers as saying the cost of cleaning up both Philippine bases would approach "Superfund proportions" -- a reference to the program for cleaning up the most contaminated sites in the United States. American engineers estimate the cost at \$1 billion.

Washington is not providing any money to clean up the bases, however. The United States has also resisted calls to provide technical assistance and more detailed military environmental documents.

The US embassy in Manila said in a statement that the "American military forces practiced good environmental stewardship during their stay in the Philippines."

But that assertion is contradicted by the government's own records, interviews with former military officers, Philippine base workers, and even the US military.

"Having been in and out of there many years, particularly during Vietnam, I know we were really [environmentally] abusive," said retired Navy Rear Admiral Eugene J. Carroll, now an official with the nonprofit Center for Defense Information in Washington, a group that has been critical of military spending. "We clearly left behind a toxic brew."

Vest, who oversees environmental issues at foreign bases for the Pentagon, said there is no question the former US bases in the Philippines were contaminated by American forces.



Girl washes hair with water from contaminated well. **DIGNA ESUZA, 8**, washing herself from a contaminated pump at Clark Air Force Base that was supposedly closed. (Globe Staff Photo / Tom Herde)

"I do recall years ago having been at Clark and physically seeing contamination," he said. "There is contamination at those locations that was indeed caused by the military."

Recommendations ignored

The Navy's environmental officers at Subic Bay tried to remedy the hazards created by operations at the massive base. They knew pumping millions of gallons of untreated sewage into Subic Bay each day was a threat to public health.

They proposed building a sewage treatment plant at a cost of \$12.7 million. To correct other deficiencies,

they recommended the construction of hazardous-material storage buildings, improvements to leaky fuel storage tanks, and other environmental projects totaling more than \$2 million. But none of the recommendations were followed.

When it comes to spending money on environmental projects at its bases in 140 countries around the world, the Pentagon has been stingy.

There is no dedicated budget for environmental cleanups overseas, as there is for domestic bases. Many environmental decisions are made by base commanders, who are often placed in the position of deciding whether to cut funds for training and logistics, which could prove hazardous to their soldiers, or rejecting requests for environmental improvements.

"Their policy overseas is to do nothing," said Polly Parks, the president of Ross & Parks, Inc., a Washington company which works with countries concerned about base contamination.

The Pentagon plans to spend \$165 million on overseas environmental projects this year. Ninety percent will be spent on environmental compliance and maintenance, with the balance used to clean up contaminated soil or water. Domestically, the military spends \$1.72 billion a year to clean up contaminated sites.

Unlike in the United States, commanders at foreign bases are often faced with vague and conflicting directives on environmental issues. US bases overseas are required to comply with the environmental quality standards of the host country, and to adhere to additional requirements or guidance provided in treaties. The Department of Defense also requires overseas bases to "conform to the extent practicable" to the more detailed standards followed at bases in America.

The Pentagon's Vest said each foreign commander has to create an environmental document that ensures the base complies with local law, any treatment requirements, and DOD standards.

"The policy and standards are clear," he said. "You do not contaminate ground water or soil with current operations. And if there is a spill, you clean it up."

However, US personnel overseas sometimes do not know what is required. A 1991 audit by the General Accounting Office found most environmental officials at overseas bases did not have even a basic knowledge of local regulations.

A report in September by the Department of Defense Inspector General concluded that at American bases in Germany, "the training of environmental personnel on the applicability of the German law and the increased potential for German enforcement action was insufficient."

Because of concerns over secrecy, environmental inspectors in many countries are not granted access to US bases, leaving it up to the military to police itself. In its report, the GAO prevented foreign countries from learning of hazards on their land by deleting "references to specific organizations that generate hazardous waste, names of installations and countries where they are located, and all photographs."

In countries like the Philippines, weak environmental regulations are usually accompanied by impotent enforcement. Furthermore, American regulatory agencies, such as the Environmental Protection Agency, have no authority to police the overseas activities of the military.

"What is lacking is laws," for overseas environmental compliance, said William Gallagher, who studied US operations in Germany for the Defense Department Inspector General's office. "You do things as the result of agreements, but there are no hard-and-fast requirements for what you do overseas."

There is also no accurate gauge of the extent of overseas contamination. The military does not routinely conduct environmental studies to identify contaminated areas, as it does domestically. And unlike at home, there is little or no pressure overseas from environmental groups to press the military to identify and clean up hazardous sites.

Yet the hazards that are known are causing concern among some government officials and activists.

The GAO report discovered contaminated ground or water at five of the seven overseas bases it inspected. "We identified conditions at the...bases we visited that, had they occurred at bases in the United States, would have been violations of US environmental regulations," the report said.

A second report by the GAO, in 1992, said the environmental damage at the Philippine bases was "significant" and "would not be in compliance with US environmental standards."

In Puerto Rico, a US commonwealth, the local attorney general alleged this summer that the Navy was violating clean water, clean air, and hazardous-waste laws in its operations at the Vieques base. The Navy has admitted to mistakenly firing rounds tipped with depleted uranium at Vieques, and using napalm in 1993. A preliminary health study found the physical and mental health of the residents near the base was significantly worse than that of other Puerto Ricans.

In South Korea, sewage from two bases flows untreated into local rivers, a practice that would be illegal in the United States.

"I find that situation disgusting," said a high-ranking US military official, who

has pushed for tougher environmental standards overseas, and asked not to be identified.

An easy dumping target

The Spanish were the first to look at the lush, tropical mountains that rise to form a protective ring around Subic Bay and see the deep-water port for both its natural beauty and strategic importance. In 1908, the United States established a naval base at Subic that would become a key staging area for wars fought in Korea and Vietnam.

Thousands of Navy jets and ships passed through Subic Bay. Repairing and maintaining the equipment resulted in thousands of tons of hazardous waste. Right up until the Navy left the

facility in 1992, the adjacent bay provided an easy and convenient dumping area for heavy metals, fuel, chemical ammunition waste, and raw sewage.

Roquito Dioso, a Filipino who worked at Subic, said there were two rules of thumb for the hazardous waste produced at the Naval Magazine, where bombs and ammunition were stored and destroyed. Both violated local and US regulations.

If the amount of toxic waste was less than a full barrel, the waste was dumped into a local stream, he said. If there was enough waste to fill several barrels, it was trucked to a local landfill and dumped, Dioso said.

Only a quarter of the 5 million gallons of sewage pumped by the Navy into the bay every day was treated. An internal 1992 report found that contaminated wastewater generated by the sandblasting of ships was discarded in the bay. "To a certain degree, the area became saturated with waste," the report stated.

The contamination was not limited to the bay. Of the area around the base foundry shop, the Navy report noted, "Aside from the high possibility of PCB ground contamination, it is quite probable that the area is also contaminated with heavy metals, particularly lead, copper, cadmium, silver, etc."

The US turned over 1,000 pages of environmental documents to the Philippine government. Those documents, according to experts, are likely only a fraction of the total that exist.

Christopher Coles, an engineer with Kleinfelder Inc., a US firm that works on domestic base cleanups, told a Philippine Senate committee in September that the documents generated by a facility like Subic should fill a medium-sized warehouse. And the documents would only tell part of the story, he said.

"I was stationed at Subic for five years," said Coles. "To my knowledge, things occur that are not necessarily documented.... You will find things you don't expect."

Base workers have described many improper practices not detailed in Navy records released to the Philippines. In one incident, a base worker said he and others were ordered to pour cyanide out of drums directly into a landfill. The same landfill, which contained other hazards dumped by the Navy, was frequented by local scavengers.

Since the United States left both Subic and Clark, there have been few environmental or health studies.

A study of Subic, which the Philippine government is developing as an international business and tourism zone, found only isolated contamination. The study has been criticized by US scientists and engineers as substandard. The environmental official for the Subic Bay Metropolitan Authority, the government agency developing the area, acknowledged the shortcomings of the 1997 government-funded study, saying it was intended more as development tool than an environmental review. The official, Michael Musngi, said a more recent study by a Japanese company found a high concentration of heavy metals in sediment samples taken from Subic Bay.

The 1997 study did identify 10 contaminated areas and suggested further studies on 13 other sites. Asked if those areas are being studied, Musngi said, "Unfortunately, no. Subic Bay is in dire need of funds."

The Philippine government is ill-equipped to study the bases. Officials collected water samples at Clark in used Coke bottles. A group of US scientists donated a device to test water, but it has not been used because the Philippine scientists don't know how to assemble or operate the equipment.

"That is exactly the problem," said Saul Bloom, a San Francisco-based environmental activist who has studied contamination at the bases. "How do you walk away from a country that does not have the capacity to do this?"

Philippine officials at Clark and Subic complained about a lack of cooperation from the US military, saying they have not been provided documents needed to identify toxic hotspots.

Some of the records may no longer exist. The Navy report said "several environmental files were reported missing" and others were shredded. At a Subic facility where excess and unusable munitions were incinerated, there are no records of how the Navy disposed of toxic residue from the burning of ammunition. "It is likely that the area is contaminated with lead, lithium, and other heavy metals," according to the report.

The US government maintains it bears no responsibility to clean up the contamination in the Philippines.

In a letter written to the Philippine Senate this summer, Sherri Goodman, the deputy undersecretary of defense, said the 1947 treaty governing the bases does not require the United States to pay for any cleanup. In addition, she said, a 1988 amendment to the treaty waived the Philippines' right to demand cleanup.

Officials at the Defense and State departments refused to comment officially on the Philippine bases. Privately, some said there is general indifference to overseas pollution, and in the case of the Philippines, lingering resentment from a 1992 Philippine Senate vote to end the US lease at Subic Bay.

Some Philippine government officials are also uninterested in pushing the United States to clean up the bases. The Philippines still counts Washington as an important military ally, and some officials here worry the relationship would be damaged by a more aggressive push to clean up the bases.

Those fighting for a cleanup, however, say every day of delay results in more exposure to toxic waste.

"I don't want to sound like a beggar," said Philippine Senator Loren Legarda-Leviste. "We are asking for justice. This was a lopsided agreement that does not protect the environment. Who could think of environmental protection in the 1940s?"

Poisonous well 'closed'

The children priming the Champion Pitcher well at the former Clark Air Base are smiling. Drawing water from the well is fun and they have no idea that they are pumping poisons from the ground.

Thousands of families, many refugees who lost their homes during the eruption of nearby Mount Pinatubo, moved here after the United States left the facility in 1991. From the shells of barrack buildings, some of this country's poorest residents built new homes from the foundations, patching together cardboard cigarette boxes, stray two-by-fours and scrap metal to make walls and roofs.

As the children play at the well, Epifania de Leon carries her eight-year-old daughter, Michelle, clutching the child close to her chest and taking care to avoid the crumbled concrete blocks around her.

The de Leons moved away from Clark last year, but still come back to visit friends. The children

playing in the contaminated water are a harsh reminder of why they left.

Three weeks after arriving at Clark, and drinking the water, Michelle experienced severe diarrhea. Within a few months, the once-active three-year-old stopped talking and walking.

Michelle today looks like a child half her age. She is unable to eat solid food and her legs are gaunt and malformed. Her eyes and mouth widen, and her fists clench as she repeatedly fends off spasms. She spends her days lying on a floor or cradled in her mother's arms, unable to communicate the most basic of needs. When asked what made her daughter sick, de Leon is quick to nod toward the nearby well.

It's been more than two years since the Weston International study determined that the water coming from the wells at the Clark Air Base command center was contaminated. At a Philippine Senate hearing in September, the chief environmental officer for Clark Development Corporation, the government agency that now operates the air base, said the wells were ordered closed as soon as the results were known.

The day after the hearing, however, a Globe reporter found the children pumping water from a well reported closed. Residents of the center said the wells continue to be used for drinking water. The wells were shut down, but only for a day, when a Philippine senator came to visit the site, residents say.

Those pushing for a cleanup of the bases are growing frustrated. They have talked of filing a lawsuit against the United States -- a difficult effort that could take many years to resolve.

Myrla Baldonado, who started the People's Task Force for Bases Cleanup, said Filipinos are beginning to realize the danger of toxic waste. As they learn more, people in the country are beginning to demand more, she said.

What they can't understand, she said, is the indifference of the American government. "It's enraging," Baldonado said. "The US is a very callous government. People remember how Americans treated Filipinos when they were here. This is just a continuation."