

## **Radiation? Mystery may never be solved at IEL**

**By BRAD DAVIS Repository staff writer**

LAKE TWP. — Drab military cargo trucks, rumbling through a slumbering Uniontown in the middle of the night. Radioactive warning placards on tanker trucks, spied through the blinds of nearby living room windows.

Mysterious deliveries of shiny, metal, Volkswagen-sized plutonium carriers, ordered to be buried among the rest of the trash. Stories such as these have circulated quietly around northwestern Lake Township for years. Some have been vague references to what went into the Industrial Excess Landfill. Others have been more specific accounts. The U.S. Environmental Protection Agency and the Department of Justice spent eight months chasing down one such allegation this year and came up empty-handed.

They couldn't prove it, they reported last week. But the question of whether radioactive waste is buried in Stark County's only federal Superfund site still has not been definitively answered.

In fact, it may never be.

### **Testing the water**

Testing the area's ground water — the water that saturates the rocks, gravel and soil underground — is how the EPA has decided to monitor and study the landfill's threat to human health and the environment. The theory: what goes in must come out. As ground water flows generally from eastern Lake Township through the Industrial Excess Landfill and out the western edge of the 30-acre site, it picks up residue from the 780,000 tons of waste buried there from 1966 through 1980. And as rain falls on the grassy surface of the site, it soaks down and drains through up to 190 feet of soil and trash, mixing with the ground water and carrying more traces of the waste with it. By drilling and testing a network of monitoring wells in and around the site, scientists figure they should be able to get a snapshot of what is buried there.

EPA officials also have rounded up, as best as they can, dump receipts, transportation logs, and other records of what was brought to the landfill during the years it operated.

Finally, they have compared the Industrial Excess Landfill to other "co-disposal" sites — sites that accepted household and toxic waste — that operated during the '60s and '70s, to get a feel for what else likely was brought to Uniontown. Still, in its regular newsletters to the community, the EPA describes the waste as being of "largely undetermined and unknown composition."

In the early 1990s, the EPA debated whether to take the next step and conduct core samples, which would have meant drilling a large grid of holes across the site. The soil from the holes would have been tested directly for contaminants. But the agency determined that cores were not feasible, because of the scattered way waste was buried, the large area of the site's surface and prohibitive cost.

The EPA has been overseeing ground water sampling at the site since last year, conducted by a lab hired by four Akron-area rubber companies liable for the site's cleanup: Goodyear, B.F. Goodrich, Bridgestone-Firestone and GenCorp. Five rounds have been conducted in the past 15 months. The next is to begin by mid-January. Several times in the past year, officials from Lake Township, the EPA and the companies have announced that the landfill is not leaking contaminants to anyone who relies on well water, and that no radiation is present underground at the IEL. "It's not there. It's a non-problem," John Frazier said of radiation at a September press conference. Frazier is a health physicist hired by the companies to handle work at the IEL.

### **Best science?**

On and off for the past decade, radiation has, in fact, been reported at the Industrial Excess Landfill: uranium, tritium, radium, plutonium-238, -239 and -240. Sometimes well over what the EPA deems safe levels; sometimes right on the borderline. Without fail, though, all indications of radiation ultimately have been rejected. "Hot" wells have been re-drilled and tested. Water has been resampled. Samples have been reanalyzed. Some entire rounds of test results have been thrown out, labeled unreliable.

In November of 2000, ground water tests showed levels of plutonium high enough to warrant reanalysis by the EPA's radiation lab in Montgomery, Ala., the National Air and Radiation Environmental Laboratory. Samples from March 2001 again showed detectable levels. The laboratory resampled the two November test results from Monitoring Well 1, in the southwest quadrant of the landfill, and could not detect any significant amount of plutonium. In fact, the lab couldn't detect a difference between the ground water and some pure, distilled water from the laboratory.

"In general, the uncertainty of the measurement process does not allow distinguishing between very low levels and zero activity with 100 percent certainty, and therefore it is generally not possible to say with 100 percent certainty

that a radionuclide is not present,” according to an Oct. 3 memo by John Griggs, chief of the lab’s monitoring and analytical services branch. But he concluded that “these isotopes are either not present in the samples, or, if present, are present at such low levels that it is not possible to accurately differentiate their concentrations from zero.” The EPA and Lake Township have used this memo to explain why radiation testing has stopped at the landfill. “Even if those levels were true plutonium, they’re not dangerous levels,” said Tom Shalala, a Lake Township resident and consultant hired to handle the scientific work at the site on behalf of the township. The companies’ lab reported total plutonium levels of 0.28 picocuries per liter in Monitoring Well 1-D and 0.23 in 1-I. The maximum level of plutonium that the EPA considers safe in finished drinking water is 15 picocuries per liter.

But Mark Baskaran, a geology professor at Wayne State University in Michigan who was called with questions by Concerned Citizens of Lake Township, sees the results differently. “It looks like the whole thing is a gimmick,” he said of the sampling and the reanalysis. “They want to get some result, and they get it. “It is my opinion that there is a large amount of plutonium somewhere in that soil. Either in solid form or liquid form. If it’s in a solid form, the container it is in must have leaked. If it is liquid, it has reached the ground water.”

The small amount first reported by the commercial lab in the ground water indicates that there must be much more plutonium clinging to the soil above the ground water, Baskaran said. Plutonium is in all soil and ground water because of natural global fallout since plutonium production began in the 1950s. But these levels typically are very low.

“You cannot expect 0.23 or 0.28 picocuries per liter in the ground water,” said Baskaran. “Even if you leach all the plutonium from the soil from global fallout, you still will not find this concentration.” NAREL’s Griggs, though, said the levels first reported by the companies’ lab were just measurement “noise” and cannot be accepted as valid.

### **Test validity**

This has happened before. In 1992, plutonium-238 was found above detection limits in IEL water analyzed by his lab, said Griggs. “But the same sample was reanalyzed three or four times, and it never reappeared,” he said. Two years before that, two rounds of tests done by an EPA-approved lab were thrown out completely and deemed invalid. Based on the data that the EPA has validated over the years, “It is our opinion that there is no data that indicates plutonium at the site,” said Griggs.

“In the case of the IEL,” said the EPA’s remedial project manager, Ross del Rosario, “there are a few detects, numbers that seem to say, yes, it is above background. But, overall, if you assess the whole body of data, you would see that the preponderance of evidence shows no indication to support that.” The EPA would expect to see a pattern over time and across the site of more hits of radiation if there really were any at the site.

Baskaran says the lack of evidence is because the tests used to generate the data have been inadequate. He recommends longer sampling times, lower detection limits and larger samples; 200 liters of water per sample, for example. “Four to 8 liters is about the average range” that said Griggs. “His approach would be unprecedented” in dealing with the nation’s Superfund sites, Griggs added. Tests always can be improved, he said. But there must be a practical limit. “There ought to be some reason to do that,” Griggs said. “It is resource-intensive. To do it for no reason would not be a good use of resources.”

### **Another site**

The Hanford Site in southeastern Washington state, a 560-square-mile Cold War-era plutonium processing facility, is undergoing a sweeping cleanup after decades of production, storage and disposal of radioactive materials.

In 1998, plutonium turned up in a ground water monitoring well on the site, which includes part of the Columbia River. They found 0.000125 picocuries per liter of plutonium in the ground water. That’s 1/1,840th of what the companies’ lab reported at the IEL last year. “The levels we have identified are extremely low, approximately twice the concentration from world-wide atmospheric fallout measured in the Columbia River upstream from Hanford,” said John Wagoner, manager of the Department of Energy’s Richland Operations Office at Hanford, in a press release at the time of the finding.

“Recent technology developments allowed us to measure this level of plutonium in the ground water,” Wagoner added. “Our monitoring wells are part of the department’s efforts to better characterize and understand the scope of Hanford’s cleanup as we work to protect the Columbia River.” Griggs said because of the expectation of finding plutonium at Hanford or other such sites, that kind of precise testing makes sense. But the evidence collected at IEL doesn’t lead the EPA to suspect plutonium or other radionuclides are buried here that would not be found by routine analysis.

Last week, the EPA and Justice Department announced they could not verify a claim by the IEL’s former owner-operator that he had been ordered to bury three large containers of plutonium-238 at the site 30 years ago. In announcing the finding, regional Superfund Director William Muno said his agency is confident that radiation is not a threat in Lake Township.

Even if radiation were on the site, testing has detected none of it leaving the site, he said, and no one is using the well water in the area anyway. Residents can study the growing record of tests, reports and other documents related to the IEL at two locations: Hartville Branch Library, 411 E. Maple St., and the Lake Township Clerk's Office, 12360 Market Ave. N.

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