

Waste Not

The Weekly Reporter
for rational
resource management



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NOTE TO SUBSCRIBERS. *Waste Not* editors, Ellen & Paul Connett, attended the annual international Dioxin Conference in Umea, Sweden, from August 22-26th. A special report on the conference will be published by *Waste Not* for member groups, and made available for subscribers. *Waste Not* plans to publish 48 issues a year, that will allow a three week reprieve in the summer and one week at Christmas for both readers and editors alike.

VICON SHUTS DOWN RUTLAND, VERMONT, 240 TPD INCINERATOR AND FILES FOR CHAPTER 7 BANKRUPTCY.

Vicon Recovery Systems Inc., operator of the Rutland trash incinerator, filed for bankruptcy Tuesday (August 23, 1988), leaving about 60 Vermont communities scrambling to find a place for their garbage. **Vicon's** petition, filed in U.S. Bankruptcy Court in Newark, NJ, applies to five separate corporations and affects the Rutland incinerator, landfills in Sunderland and Bristol, and **Vicon** corporations in NH, Mass., and NJ. **Vicon** is seeking relief under Chapter 7 of the federal bankruptcy law, which applies to corporations that intend to liquidate their assets, rather than Chapter 11 under which companies seek permission to reorganize while they continue to operate...Precarious financing, poor planning and opposition by environmentalists paved the way to a declaration of bankruptcy by **Vicon Recovery Systems** Tuesday. 'It wasn't the opponents that killed it, but **Vicon** itself,' said (VT) Environmental Commissioner Patrick Parenteau. He said **Vicon's** precarious financial base as well as its failure to ensure a Vermont landfill for ash disposal or a lucrative rate for the sale of electricity generated at the plant, were the cause of Tuesday's bankruptcy declaration...Instead of addressing financial problems here in Rutland and at its sister plant in Pittsfield, Mass., **Vicon** spent much of its energies working on proposals for other plants throughout the Northeast, according to **Vicon** electrician Galen Briggs. He said **Vicon** had as many as 11 proposals going at one time...But there was never money for replacing equipment as it broke down through normal wear and tear, he said...Since the plant began operating in late fall (1987), district towns have been paying \$60 a ton for disposal, with some non-district towns paying much higher. Some state officials also knew long before the plant was built that the project was on shaky financial ground. Richard Valentinetti wrote in state memos that **Vicon** could not afford to put acid-gas controls on the plant because the equipment would make the project economically unfeasible. It was Valentinetti who put pressure on many Rutland County towns to close down their landfills, join the solid waste district and support the **Vicon** project, according to Solid Waste District officials. Valentinetti supported allowing the plant to begin operations with no acid gas controls, and despite letters from the Vermont Health Department warning him not to, he approved **Vicon's** operating permit without requiring acid-gas controls. That was in 1983, long before construction began. It was Valentinetti's actions that caused Marion Fish, a former neighbor of the plant, to begin her opposition to the facility. She was soon joined by Patricia Donnelly, a Rutland alderman...The two women soon learned from other state documents that Rutland was prone to nightly air inversions and that Valentinetti, in a separate report, had stated that Rutland had the worst air quality in the state. They were joined by other opponents, most notably Rutland Town farmer David Dickinson, in fighting the plant on several levels. They argued that the plant's location was among the worst in the county (a point that Natural Resources Secretary Jonathan Lash agreed with) and that the project was not economically sound...**Vicon** has never explained why costs for the project jumped from the first estimate of \$11 million to the more than \$36 million." -(Rutland Herald, 8-24-88). "The Rutland County Solid Waste District hired an attorney considered an expert in bankruptcy law several months ago in anticipation of **Vicon's** declaration of bankruptcy"...VT's Environmental Commissioner "Parenteau said **Vicon's** declaration of bankruptcy could cause other Vermont communities to decide against trash incineration as a solution to waste-management problems. Despite the agency's support for reopening **Vicon**, Parenteau said the state would focus statewide waste-

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management efforts on more modest proposals than the **Vicon** incinerator and avoid 'high-cost projects, whether these are incinerators or massive landfills. For Vermont, there are different economics at work. Our needs can be met with more appropriate technology through sane recycling and reduction programs and appropriately sized landfills,' Parenteau said." -(Rutland Herald, 8-25-88). "**Vicon Recovery Systems** listed 492 creditors and \$39 million in debts in bankruptcy papers filed in U.S. Bankruptcy Court in Newark, NJ." -(Rutland Herald, 8-26-88). "The two firms interested in buying **Vicon** are **KTI Holdings Inc.** of Portland Maine (see Waste Not #16), and **Instoria Inc.-Providentia Ltd.** of N.Y...Fred Whitridge, v.p. of **Instoria**, said the company had been exploring a **Vicon** purchase before the bankruptcy papers were filed. Officials from **Instoria**, which buys financially troubled businesses with hopes of turning them around, were in Vermont on Monday to tour the **Vicon** plant and Sunderland landfill. A third possible buyer is the Rutland County Solid Waste District." -(Sunday Eagle Times, NH, 8-28-88). (For more on the Rutland incinerator see Waste Not #'s 5 and 16).

KTI'S 600 TPD RDF PLANT SHUTS DOWN IN MAINE. "**KTI Energy Inc.** severed its contract with General Electric Thursday (8-18-88) a few hours after GE had said it would stop operating the plant until noise and odor problems were solved...But in the meantime, 27 communities that take their waste to the facility must find landfills that will accept it...**KTI** is the parent company of the **Maine Energy Recovery Co. (MERC)**, which owns the incinerator...The latest turn of events began Thursday with reports of a threatened walkout by employees who operate the incinerator and a request by **KTI** officials for police protection to safeguard company documents. **KTI** charged that GE was to blame for the noise and odor problems because it had failed to meet health and safety regulations. Buonagura (**KTI's** general counsel) said GE had been asked several times to close the plant's garage doors to prevent odors from escaping and to turn down horns and loudspeakers at night to reduce noise...**KTI** called for police protection after GE employees had threatened to walk off the job Thursday morning. GE denied any threats of a walkout and said the company was working with the plant in an attempt to control the noise and odors that have generated citizen complaints...A short time later, **KTI** announced it had severed its five-year operations contract with GE, a move that Batty (GE spokesman in Fairfield, CT) said his company would 'vigourously contest.' GE employees interviewed recently by the Journal Tribune have painted a picture of confusion among upper management and fear among employees about dangerous working conditions. One worker said the \$110 plant, which is located along the Saco River in downtown Biddeford, has been rebuilt twice because so much of it broke down." -(Times Record, Brunswick, Maine, 8-19-88).

NEW STUDY SHOWS INCINERATOR ASH MORE DANGEROUS THAN WE REALIZED. Hazardous Waste News #92 has done such an excellent review of "Municipal Solid Waste Composition and the Behavior of Metals in Incinerator Ashes" (Environmental Progress, V.7, pgs 22-30, 1988) that Waste Not has reprinted and are enclosing Dr. Montague's full review.

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HAZARDOUS WASTE NEWS #92

From RACHEL: Weekly news and resources for citizens fighting toxics -- August 29, 1988

NEW STUDY SHOWS INCINERATOR ASH MORE DANGEROUS THAN WE REALIZED

A new study by a team of engineers at Rutgers, the state university of New Jersey, shows that municipal incinerator ash is more dangerous than previously realized.

When household garbage burns, the resulting ash has two parts: fly ash, most of which is captured from the smoke stack by an air pollution control system, and the heavier "bottom ash" which falls through the grate of the combustion chamber into an ash pit; both types of ash must be carted away. Both types of ash contain toxic heavy metals (chromium, cadmium, lead, arsenic, zinc, and other metals) as well as organic compounds (PCBs, dioxins, benzene, and other cancer-causing organics). Here we will discuss only the metals.

When the ash is thrown away, the metals in the ash become available to the environment. Currently, such ash is typically heaped on the ground somewhere, or is dumped in a municipal landfill. Then rainwater seeps into the ash and begins to dissolve the metals and carry them into the general environment.

Chemical engineers at Rutgers have released a new study showing that toxic metals in municipal incinerator ash are more abundant and more soluble, and therefore more dangerous, than previously thought.

The Rutgers team took samples of household solid waste from three locales (Pennsauken, NJ, Magnolia, NJ, and Somerset County, NJ) and burned them in a small (50 ton per day) solid waste incinerator. They captured the fly ash and the bottom ash. The solid waste samples did not include substantial quantities of industrial trash but were restricted to household wastes.

The actual composition of the ash is shown in Table 1. There were, of course, other elements and compounds in the ash, but the Rutgers team did not measure these because they are not regulated under federal law. As is obvious from these numbers

(which are all given as parts per million, or ppm) there are large quantities of metals in the ash.

Table 2 shows how many pounds of metal are found in each ton of ash, using the "average" values given at the bottom of Table 1. (We, not the Rutgers group, did the averaging in Table 1.)

The numbers are quite astonishing. Take lead, for example. If a 2000 ton-per-day incinerator produces 500 tons of ash

TABLE 1--Metals in ash resulting from combustion of household wastes

Waste Source	Metal	Fly ash (ppm)	Bottom ash (ppm)
Pennsauken	Chromium	30	40
	Cadmium	490	100
	Lead	4990	6970
	Arsenic	47	118
	Zinc	4700	4400
Magnolia	Chromium	50	73
	Cadmium	130	5
	Lead	2838	650
	Arsenic	80	71
Somerset	Chromium	52	35
	Cadmium	227	8
	Lead	3993	852
	Arsenic	87	112
Average	Chromium	44	49
	Cadmium	282	37
	Lead	3940	2824
	Arsenic	71	100

per day, and if 10% is fly ash and 90% is bottom ash, the total daily ash will contain 2935 pounds of lead. That's a ton and a half of lead per day. The same arithmetic tells us that one day's ash will contain 48 pounds of chromium, 61 pounds of cadmium, and 97 pounds of arsenic. In a year's time (operating 5 days a week, 52 weeks a year), such an incinerator will put out 12,610 pounds of chromium, 15,990 pounds of cadmium, 25,246 pounds of arsenic, and three quarters of a million pounds of lead (763,256, actually). These are all metals that are toxic in microgram quantities (there are 454 million micrograms in one

pound).

All of this metal will most likely leach into the environment sooner or later. But the law does not view it that way. The law requires that the ash be tested for toxicity using something called the "extraction procedure" toxicity test (EP Tox Test for short). The EP tox test asks, "If we mix the ash with a dilute solution of acetic acid and then test the dilute solution, how much metal do we find has dissolved into the solution?" If we find more than 100 times as much metal as is allowed in drinking water, then the ash is declared a "hazardous waste." If the metals are not present at levels 100 times the drinking

TABLE 2 -- Pounds of metal in each ton of ash

Metal	Flyash	Bottom ash
Chromium	0.09 lb.	0.1 lb.
Cadmium	0.56	0.07
Lead	7.9	5.6
Arsenic	0.14	0.2

water standard, the ash is declared "non-hazardous" no matter how many tons of dangerous metals it may contain. (This system clearly does not protect the public, but it's what the EPA [U.S. Environmental Protection Agency] has set, so it's what we've got.)

Many scientists have criticized the EP Tox Test for a variety of reasons. So the EPA has proposed a new test, which will soon replace the EP Tox test. The new one is called the TCLP extraction test (short for Toxicity Characteristic Leaching Procedure). The details of the TCLP are

different from the EP Tox test, but the basic idea is the same.

The Rutgers team tested the ash from the three locales with the EP Tox Test, and the Pennsauken sample was given the TCLP test. All the fly ash samples were deemed "hazardous" for both lead and cadmium by the EP Tox test. The TCLP results showed that the TCLP leached even more metals than the EP Tox test.

Lessons from the work at Rutgers: (1) The amount of metal in solid waste ash varies from place to place with socio-economic status, geographic location, season, collection patterns, and recycling practices. Your local waste stream should be sampled every 2 weeks for a year to see what it really contains; some consulting firm's "estimate" of what's in your local waste is most likely off; (2) the quantity of toxic metals in your waste may be very high and the toxicity will endure forever; ask how long the landfill liners are guaranteed. (3) The EP tox test may show that the ash is legally "hazardous" but the TCLP test is even more likely to show that the ash is legally hazardous.

Get T.L. Clapp and others, "Municipal Solid Waste Composition and the Behavior of Metals in Incinerator Ashes," Environmental Progress, Vol. 7 (Feb., 1988), pgs. 22-30. Dr. Clapp's address is: Department of Chemical and Biochemical Engineering, College of Engineering, Rutgers, P.O. 909, Piscataway, NJ 08854; phone (201) 932-3047 or 932-2213.

Note: Next week we'll continue our series on U.S. waste problems, "What we must do." In it, we are discussing waste haulers, waste producers, and, finally, remedies.

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