• NYC Bar Association meeting,

• March 22, 2007

Jim Warner
Is Thermal Treatment of Solid Wastes Good for New York City?

March 22, 2007
Only County in Pennsylvania to Own & Operate a Fully Integrated Solid Waste Management System

Pennsylvania

Lancaster County

- Waste-to-Energy Facility
- Transfer Station & HHW Facility
- Frey Farm Landfill & LFG Plant

500,000 population served
With some of the most fertile soil in the U.S., Lancaster County has a strong farming industry. Lancaster County's 5,293 farms, generating $800 million in food, feed and fiber, are responsible for nearly a fifth of the state's agricultural output. Wikipedia
The Integrated System

ALL COLLECTED WASTE

RECYCLING
Lancaster County citizens work together to reduce the flow of waste to the Transfer Station and to conserve precious natural resources.

Remaining waste is delivered to the Transfer Station.

TRANSFER STATION

Waste that will burn is

Electricty is used to generate energy.

The Transfer Station sends waste to either the Landfill or the Resource Recovery Facility.

FREY FARM LANDFILL

Waste disposed at the Landfill is covered at the end of every day with ash from the Resource Recovery Facility. The Landfill also has a protective layer of plastic liners on the bottom to keep our environment safe.

RESOURCE RECOVERY FACILITY

Waste that comes to the Resource Recovery Facility is burned to make electricity.

Waste = Ash

By using the Resource Recovery Facility, the Authority reduces ten truckloads of waste to one truckload of ash.

HOUSEHOLD HAZARDOUS WASTE FACILITY

Proper disposal of household hazardous waste allows it to be managed in an environmentally safe manner.

- computers
- batteries
- tennis rackets
- motor oil
- insecticides
- moth balls
- guns
Benefits of an Integrated System
Lancaster County, PA
2006

90% Landfill Volume Reduction

Recycling & WTE Recovery

1,040,000 yd³

Landfill System

vs

Resource Recovery System

100,000 yd³

Landfill Volume Yd³ (Thousands)
WTE has supported recycling efforts, **not** competed with them.

Ferrous recovery contributes 3% to the overall County recycling rate.

WTE began operating in 1994.
WTE Ferrous Recovery & Recycling

2% of every ton processed is ferrous; recovered and recycled.

Currently selling this material for $185 per ton.

Bike frame, eating utensils, aerosol cans, tools, oil filter, dumbbell, coat hanger, cooking pot, paint can – All items NOT included in curbside recycling programs, but 100% recyclable.
LCSWMA WTE Carbon Monoxide Emissions

(Permit limit: 100 ppm, 4-hr. avg.)

CO = 80% below

(Emissions as determined by the plant’s Continuous Emissions Monitoring System and verified by PADEP’s Bureau of Air Quality Control)
LCSWMA WTE Hydrogen Chloride Emissions
(Permit limit: 25 ppm, 24-hr. avg.)

HCl = 60% below

(Emissions as determined by the plant’s Continuous Emissions Monitoring System and verified by PADEP’s Bureau of Air Quality Control)
LCSWMA WTE Nitrogen Oxide Emissions

(Permit limit: 180 ppm, 24-hr. avg.)

NOx = 10% below

(Emissions as determined by the plant’s Continuous Emissions Monitoring System and verified by PADEP’s Bureau of Air Quality Control)
LCSWMA WTE Sulfur Dioxide Emissions
(Permit limit: 30 ppm, 1-hr. avg.)

SO$_2$ = 82% below

(Emissions as determined by the plant’s Continuous Emissions Monitoring System and verified by PADEP’s Bureau of Air Quality Control)
LCSWMA WTE Respirable Particulate Emissions
(Permit limit: 0.010 gr/dscf)

PM$_{10}$ = 92% below
LCSWMA WTE Dioxin Emissions
(Permit limit: 2 ng/Nm3)

Dioxin = 93% below

(Emissions as determined by the plant’s Continuous Emissions Monitoring System and verified by PADEP’s Bureau of Air Quality Control)
LCSWMA WTE Emissions Compliance History

(Emissions as determined by the plant’s Continuous Emissions Monitoring System and verified by PADEP’s Bureau of Air Quality Control)
WTE Facility Tour

“Why aren’t there more communities with one of these?”

• Most frequent question asked by visitors after a tour.
Waste-to-Energy Offers Stable Tipping Fee Structures in Your Community

Lancaster County tipping fee history
Waste-to-Energy

Reduce the Volume of Waste, Reduce Trucking by 90% and Generate Renewable Energy

1 Truckload of Trash → Which Result is Better?

IN

100 cubic yards of waste

90% volume reduction

OUT

10 cubic yards of (inert) ash

13,000 KWh generated

Power a home for 1 year

Reduce the Volume of Waste, Reduce Trucking by 90% and Generate Renewable Energy
Waste TO Energy
…and not Waste OF Energy

1 ton of MSW = 1.6 barrels of oil

Energy Equivalence

26,000 bbl oil per day