

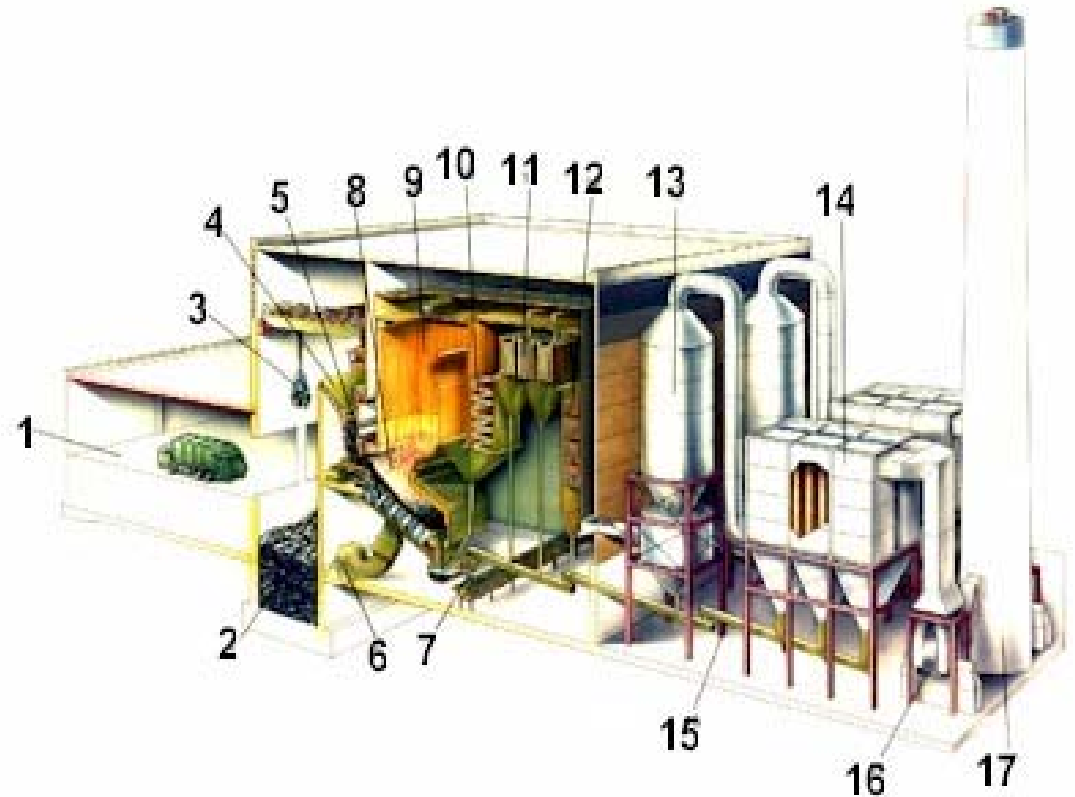
A Clean and Clear Solution



Waste-To-Energy Facility
950 Market Avenue SW
Grand Rapids, MI 49503

For More Information: (616) 336-4355
Group Tours: (616) 235-3210
NOTE: Groups must be 5th grade or
older.

Inside the Facility



- | | |
|--------------------------|-----------------------------|
| 1. Tipping Floor | 9. Radiant Zone (furnace) |
| 2. Refuse Holding Pit | 10. Convection Zone |
| 3. Grapple Feed Chute | 11. Superheater |
| 4. Feed Chute | 12. Economizer |
| 5. MARTIN Stoker Grate | 13. Dry Gas Scrubber |
| 6. Combustion Air Fan | 14. Baghouse |
| 7. MARTIN Ash Discharger | 15. Fly Ash Handling System |
| 8. Combustion Chamber | 16. Induced Draft Air Fan |
| | 17. Stack |

Waste-To-Energy in Kent County

Located in the city of Grand Rapids, the Waste-To-Energy (WTE) facility has been operating for over 17 years. While this is a



The Kent County Waste-To-Energy facility celebrated 17 years of service in February 2007.

notable achievement, there is every reason to expect many more years of clean, reliable service for the citizens of Kent County. The County-owned WTE Facility is the primary solid waste disposal facility for the cities of Grand Rapids, East Grand Rapids, Grandville, Kentwood, Walker, and Wyoming. Kent County has entered into contracts with the cities as part of an integrated approach to solid waste management including waste reduction, recycling, a household hazardous waste program and landfilling. The WTE was built after many years of planning and discussion with the full participation of the six cities, businesses, environmental groups, and the general public. Construction of the WTE facility was completed ahead of schedule and under budget. Covanta Kent, Inc. operates the WTE facility under a 20 year contract.

Facility Operations

The WTE Facility is located at 950 Market Ave. SW on a 9-acre site zoned for heavy industry in the City of Grand Rapids. It takes about 40 employees of Covanta Energy and 10 from Kent County per day to run the facility 365 days a year.

Approximately 585 tons of municipal solid waste (MSW) is processed every day, totaling 177,000 tons per year. In addition, approximately 4,500 tons of ferrous metal is recycled from the ash every year. MSW is burned on specially designed furnace grates to burn the most waste efficiently. High pressure steam is generated in waterwall boilers and routed through a turbine/generator to produce electricity. This electricity is first used on-site with the balance sold to Consumers Energy Co. to cover a portion of operation costs. The electricity that is sold is enough to service all of the households in Grandville and Walker. Steam can also be exported and sold to the County District Heating and Cooling Operation (DHCO) where it displaces steam produced by burning natural gas or oil. The DHCO is the main boiler plant for about 125 customers in downtown Grand Rapids. DHCO customers use steam for heating, cooling, snow melt, laundries, humidification, sterilization, culinary and other process needs.

Environmental Controls and Benefits

The WTE Facility operates under one of the toughest environmental permits in the State. MSW coming into the facility is screened by County and Covanta employees before being placed in the waste storage pit. The Facility also has the ability to remove oversized or non-processable waste from the waste storage pit without running it through the combustion units. Air pollution control technology utilized includes computerized combustion controls, acid gas scrubbers, carbon injection for



Clean air, water, and soil are all important now and for the future.

control of mercury emissions, a SNCR system for control of nitrogen oxides and bag houses for control of heavy metals and particulates. The facility employs a Continuous Emissions Monitoring system to insure proper operation within permit standards. In addition, an independent lab conducts separate stack emission tests every year in accordance with State standards and with State Inspectors present. The ash produced at the plant is non-hazardous and takes up only about 5% of the space in a landfill of regular waste. The high furnace temperature (1,800-2,000°F) destroys the organic compounds that can cause ground water contamination in older, compromised landfill sites.

Quick WTE Facts

- The WTE facility operates 24 hours/day, 7 days/week and 365 days/year with scheduled maintenance outages in the spring and fall.
- Through May 2007, over 3,173,000 tons of waste have been processed.
- Energy produced from burning municipal solid waste is renewable. The energy from burning 1 ton of waste is equal to burning 1.737 barrels of oil. Through May 2007, over 5,512,000 barrels of oil have been saved.
- Over 3,937 acre feet of landfill space has been saved (an acre foot is one acre of land covered one foot deep).
- Over 93,727 tons of ferrous metal has been recycled.
- Over 1,422,723,500 KWh of electricity has been sold.
- Over 1,351,294,000 pounds of steam has been exported to the DHCO.
- 100% compliance achieved with Permit standards on all environmental tests to date.
- A proven record for reliable operation. Since service began, the WTE facility has averaged 91% boiler availability including all scheduled and unscheduled maintenance.
- Operation is cost effective. A typical family of four pays about \$113/year in disposal costs (in 2007). This is a fraction of rising water and sewer costs.

Kent County, Michigan

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