



MUNICIPAL SOLID WASTE MANAGEMENT

The GEA Group is a multi-disciplined civil-environmental engineering firm that provides the latest in expertise and technology for solid waste management solutions. GEA maintains a specialized staff of Civil & Environmental Engineers, Mechanical & electrical Engineers, Hydrogeologists, Geologists, and Solid Waste Management Professionals who provide comprehensive environmental service to a variety of clients.

Solid Waste Planning and Design Services include:

Sanitary Landfills, Waste to Energy Recovery Plants, Waste Disposal Sites, Transfer Stations and Materials Recovery Facilities, Refuse Processing and Composting Facilities, Tire, Landfill Gas Recovery and Cogeneration, and other Waste Management Systems.



Materials Sorting & Recovery

Waste to Energy

This process creates energy in the form of electricity or heat from the incineration of waste; or gasification to produce gaseous fuel. Energy recovery produces electricity directly through combustion and steam generation or produces a combustion fuel commodity, such as methane from gasification and combined cycle cogeneration.



Waste to Energy Resource Recovery Facility

Landfills & LFG Recovery

Landfill Design is conducted in AutoCAD using Digital Terrain Modeling and Civil Engineering Design Software. Grading Plans, Base Liner Plans and Closure Plans are modeled by computer and cross-sections are developed illustrating the design in various configurations. Design for New Lined Landfills include: Overall Site Planning, Grading Plans, Liner Systems, Leachate Collective System, Leachate treatment System, Storm water Management System, Landfill Gas Collection System, Landfill Gas Energy Recovery and Cogeneration, Landfill Capping and Closure System, Landscape and Vegetation Plan, Hydrogeology.

GEA maintains a specialized staff of Engineers, Hydro geologists, Geologists, and Solid Waste Management Professionals who provide a variety of comprehensive environmental services. These services have been employed on a wide range of projects, including hydro geologic investigations, landfill gas studies, landfill closure designs, landfill sighting investigations, sludge landfills, MSW landfills, C & D landfills, storm water management at landfills, landfill grading plans and groundwater and surface water monitoring.

Services Offered:

- Planning
- Solid waste characterization
- Technology assessment
- Bankable Feasibility Studies
- Economic Analysis
- Financial Analysis
- CO2 Credits
- Schedules
- Air Pollution
- Leachate Treatment
- Grants and Loans
- Permitting



Landfill Gas Recovery

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GEA has realized that any Refuse Processing Facility must be developed and founded on fundamental engineering principles. Design of material separation and composting facilities is a challenge that can only be met by a firm grasp of the engineering principles of chemical thermodynamics, microbiology, process kinetics, physics, chemistry and mechanical engineering, backed by necessary field and operation data.

Recycling and Materials Recovery

The growing trend in the United States toward Reuse preprocessing to improve fuel quality by source separation of refuse materials has created a need for effective and properly designed Materials Recovery Facilities which can handle a wide range of materials including, newspaper, OCC, ledger, HDPE, Ferrous metal, aluminum, tin cans, glass, CPO, mixed paper and other plastics and residuals. These facilities must manage the reception, sorting, densification and transport of materials in an efficient manner while producing a densified product to meet specifications. GEA has been successful in matching the level of technology needed including the scale of automation to the facility and project requirements.



Open waste sites worldwide release millions of tons of volatile organic compounds into the environment.



MSW Composting

The history of MSW composting in the United States has followed a rocky road of development due to poor compost quality, lack of odor control and competitive economics of landfilling. GEA is able to analyze and design effective composting systems for a wide range of materials including, MSW, Sewage Sludge, Industrial Wastes, and Process

Residuals. Composting Design includes: Pre-processing considerations, Process Design Modeling, Aeration Requirements, Mixing Requirements, Facility Enclosure, Materials Handling, Civil, Site work, Odor Control, Air Quality, Use of Amendments, Instrumentation/Controls, Vendor Procurement, Plans and Specifications, and Bid Documents.



LFG Cogeneration

Financial Analysis

The key to implementation of MSW and Recycling Projects is timely, low-cost financing. GEA provides this service as a complement to design services. GEA can arrange short term, medium term and long term financing of projects from US sources. GEA provides the financial assistance and program management to secure the loan package, planning, system design, export of equipment, and commissioning. This is the utmost benefit to the customer, to have one entity provide a seamless transaction from planning to financing to design, equipment delivery, and startup.

Materials Recovery & WTE Design includes:

- Material Flow Analysis
- Building Design
- Storage Requirements
- Material Handling Design
- Sorting Systems
- Densification Systems
- Baling Systems
- Air Pollution
- Instrumentation/Control
- Vendor Procurement
- Plans & Specifications
- Bid Documents
- Refuse Fuel Processing
- Waste to Energy Heat & Mat. Balance
- Gasification Energy Recovery
- Mass-Burn Waterwall Furnace
- Combine Cycle Cogeneration
- CO2 Offsets & Credits

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