FOOD WASTE COMPOSTING
IN-VEssel COMPOST SYSTEM REVIEW
PRESENTATION TO
NYDEC FOOD WASTE WEBINAR
MARCH 31, 2010
BIOCYCLE 2007 IN-VESSEL COMPOSTING VENDORS

- American Bio Tech
- Augspurger Komm Engineering.
- Backhus Kompost.
- Bac Tee System.
- Bedminster International
- BioSystem Solutions
- BW Organics
- CH2M Hill
- Christiaens Group
- Comporec
- Double T Equipment
- Engineered Compost Systems
- EPTC
- Fairfield Service Co
- Farmer Automatic.
- Global Earth Products
- Gore Cover Systems
- Green Mt. Technology

- Hallsten Corp.
- Heil Engineered Systems
- Herhof
- HotRot.
- International Composting
- IPS/Siemens
- Longwood Manufacturing
- Miller Composting
- NatureTech
- New Era. (Use HotRot)
- NexGen: Rotocom
- Schafer Systems
- Sorain Cocchini
- Stearns & Wheler (Use Comporec)
- Teg Environmental
- Transform Compost Systems
- VCU Technology
- Versa Corp.
- X-ACT.
CAPACITY ISSUES

• VERY FEW LARGE CAPACITY FACILITIES SUCH AS THOSE IN MARLBORO, NANTUCKET, DELAWARE, IPSWICH, UNITY
• ON-FARM COMPOSTERS WITH LIMITED CAPACITY
• PUBLIC OPPOSITION TO COMMERCIAL FACILITIES
• CLOSURE OF EXISTING FACILITIES SUCH AS FIVE IN MASSACHUSETTS IN 5 YEARS
• LACK OF RFPs AND LONG-TERM CONTRACTS TO FINANCE NEW FACILITIES
IMPEDIMENTS TO FARM COMPOSTING

• SITE ACCESS
• LOW-TECH
• INADEQUATE TIP FEES
• SECONDARY PRIORITY FOR FARMER
• INORGANIC CONTAMINANTS
• NEIGHBOR OPPOSITION
IMPEDEMENTS TO LARGE SCALE COMPOSTING

- POOR PERFORMANCE HISTORY
- HIGH CAPITAL AND OPERATING COSTS
- COMPETITION FROM OUT OF STATE LANDFILLS
- LACK OF WASTE BANS FOR LANDFILL DISPOSAL OR MANDATORY RECYLING OF ORGANICS
- POOR QUALITY COMPOST
- ODOR CONTROL
MAJOR PROBLEM: INORGANIC CONTAMINANTS
PROBLEMS: Contamination, usually film plastic and bags collecting on teeth in tub grinder.
NEW YORK CITY’S RIKERS ISLAND FOOD WASTE COMPOSTING FACILITY
ODOR CONTROL

• ALL PROCESSING WITHIN BUILDINGS
• BUILDING AIR BLOWN TO BIOFILTER LOCATED ADJACENT TO BUILDING
• COMPOST BAYS AERATED TO CONTROL TEMPERATURE AND MOISTURE
• CURING PILES AERATED
Fans and Blowers

• Aerate bays
• Move exhaust air to biofilter
• IPS agitated, aerated windrow

• 10 tpd food waste with wood chips

• Compost used on-site for vegetable gardens and landscaping
RIKERS ISLAND CORRECTIONAL FACILITY, NEW YORK CITY

- Largest municipal prison in the country
- 17,000 inmates housed in a series of men’s and women’s cell blocks
- 5,000 ton per year Siemens/IPS Composting System (IPS) constructed in 1996
- Operated by WeCare Organics, LLC
- Cell blocks have separate cafeterias
- Pre and post consumer food waste collected daily
- Mixed with wood chips for in-vessel composting
- Compost used on-site for gardens/landscaping
SIEMENS/IPS COMPOSTING TECHNOLOGY RIKERS ISLAND

- Agitator runs on two bays
- Piles in each bay turned daily to move material down bays in 21 days
- Aeration bay blowers aerate and dry compost
- Building air collected in overhead ducts and blown to biofilter
NYS DEPARTMENT OF CORRECTIONS 2008

• 35 FACILITIES COMPOSTING FOOD WASTE
• 45,000 INMATES SERVED
• 14,000 TONS PER YEAR
• 4 WRIGHT ENVIRONMENTAL VESSELS
• 4 AERATED BAYS
• 12 COVERED WINDROWS
• 15 OPEN WINDROWS WITH LEACHATE COLLECTION & TREATMENT
NYS Department of Corrections: Windrows inside a building
WRIGHT ENVIRONMENTAL SYSTEM

• NYS Department of Corrections
• Allegheny College, Meadville, PA
• Numerous other colleges/institutions
• Food waste and bulking agent pre-mixed
• Contained for 21 days in agitated, aerated metal box
• Compost requires additional curing
ALLEGHENY COLLEGE
FOOD WASTE COMPOSTING
WRIGHT ENVIRONMENTAL
DELAWARE COUNTY, NY COCOMPOSTING FACILITY
Oxbow Hollow Compost
Marketed by WeCare Organics

- Mulch
- Turf blends
- Potting mix
- Landscaping
- Top dressing
- Soil amendment
- Erosion control
- Filter berms & buffers
BW ORGANICS ROTARY DRUM
FOOD WASTE APPLICATIONS

- Warren Wilson College, Swannanhowa, North Carolina
- Lincoln University, Jefferson City, Missouri
- Maharisha School, Fairfield, Iowa
- University of North Carolina, Greensboro, North Carolina
- Michigan State University, Grand Rapids, Michigan
- Montclair State University, Montclair, New Jersey
- Brown Creek Correctional Institution, Polkton, North Carolina
- South Central Correctional Center, Licking, Missouri
- Northeast Correctional Center, Bowling Green, Missouri
- Glacier National Park, Gustava, Alaska
- Toyoto Motor Manufacturing, Georgetown, Kentucky
- SUNY Stonybrook, NY
TOYOTA MANUFACTURING PLANT, KENTUCKY

• Three cafeterias serving 10,000 employees
• Pre- and post consumer food waste
• Dining hall “Earth Care” recycling centers
• Blend with yardwaste and compost in BW Organics rotary drum
• Use compost in greenhouse, vegetable gardens, and landscaping
MONTCLAIR STATE UNIVERSITY
NEW JERSEY

- BW Organics rotary drum behind conference center
- Food service staff separate food waste
- Mixed with shredded cardboard and wood shavings in attached mixer
- Started operation July 2007
- Process 1,000 lbs.day
- No permit from State required
NATURETECH

Aerated stationary vessels
ENGINEERED COMPOST SYSTEMS
ENGINEERED COMPOST SYSTEMS INSTALLATIONS

- Berks County, PA 1,200 T/Year – SSO Stationary In-vessel – 2008
- Mariposa, CA 50 T/Day - MSW Stationary In-vessel - 2006
- W. Yellowstone, MT 45 T/Day - MSW Stationary In-vessel - 2003
- Marin County, CA Pilot Project – SSO Stationary In-vessel - 2008
- Fort Hood Army, TX Pilot Project – SSO Covered Aerated Static Pile – 2008
- Tenino, WA 60,000 T/Year - SSO/YW Covered Aerated Static Pile – 2007
- Stanwood, WA 30,000 T/Year - SSO/YW Aerated Static Pile – 2008
- Milpitas, CA 20,000 T/Year - SSO Aerated Static Pile - 2003
- Walla Walla, WA 2,000 T/year – SSO/YW Container In-vessel - 2004
- Ottawa, Ontario 6,500 T/Year – SSO Container In-vessel - 2002
- Hutchinson, MN 10,000 T/Year - SSO In-Vessel Aeration & Control - 2001
WEST YELLOWSTONE, MONTANA

• Engineered Compost Systems technology
• Process food waste from Yellowstone National Park
• Resort concessions separate pre- and post-consumer food waste, soiled paper, and biodegradable service ware
THANKS A ROT!

KEEP YOUR SENSE OF HUMUS!