



Food Waste Composting



Why Compost Food Waste

- Food Waste comprises 14% of the Waste Stream (EPA) figure
- Significant increases in recycling rates are dependent upon reducing food waste in the waste stream.
- Properly performed composting produces a marketable beneficial product returning nutrients to the soil.



GreenCycle Demonstration Project

- DEP approval for a Demonstration Project
 - Issued October 2008
 - Construction & local approvals completed November 2009
 - Ground and surface water monitoring
 - Recently extended to November 2012
 - Up to 4,000 Cubic yards annually



GreenCycle Ellington



14 Acres Yard Waste Processing



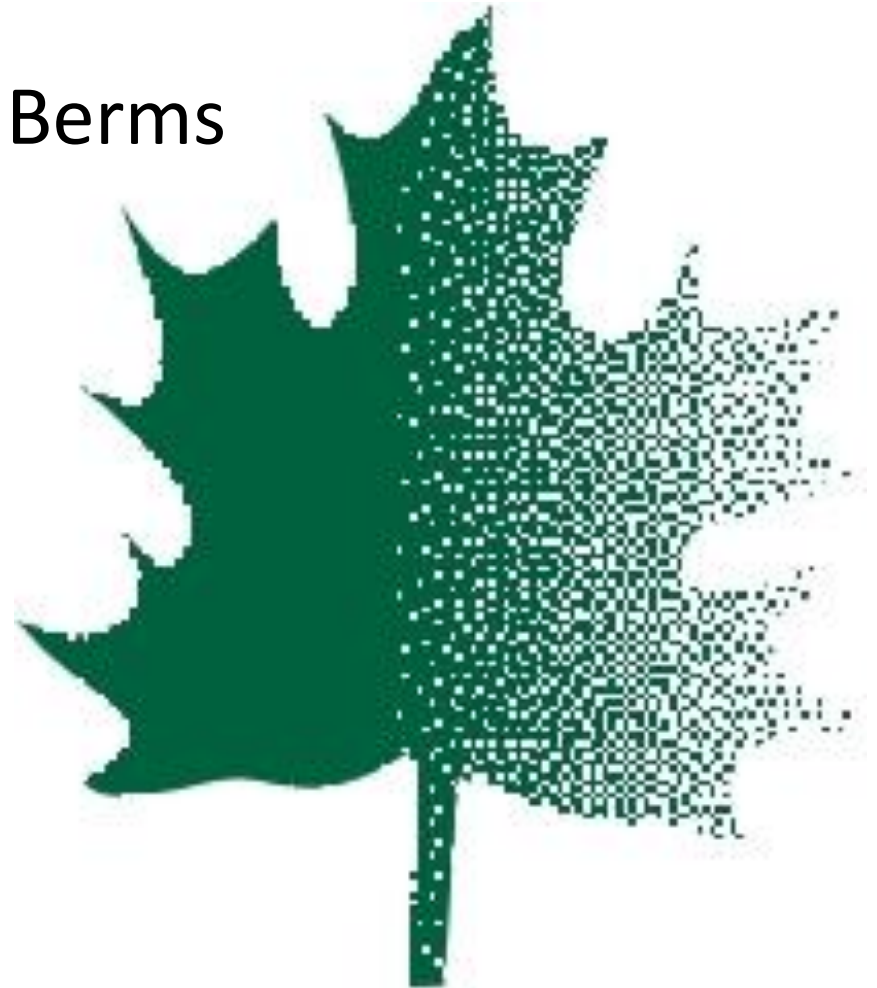
2500 ft to nearest neighbor

Transfer station next door



Site Preparation

- Up and Down Gradient Berms
- Compost Pad Grading
- Receiving Building
- Monitoring Wells



Up gradient Berms



Filter Soxx & Blanket



Soxx and Blanket Installed



So this wasn't such a great idea



Installed a Berm



Compost Pad



Receiving Building



FIVE YEAR WARRANTY

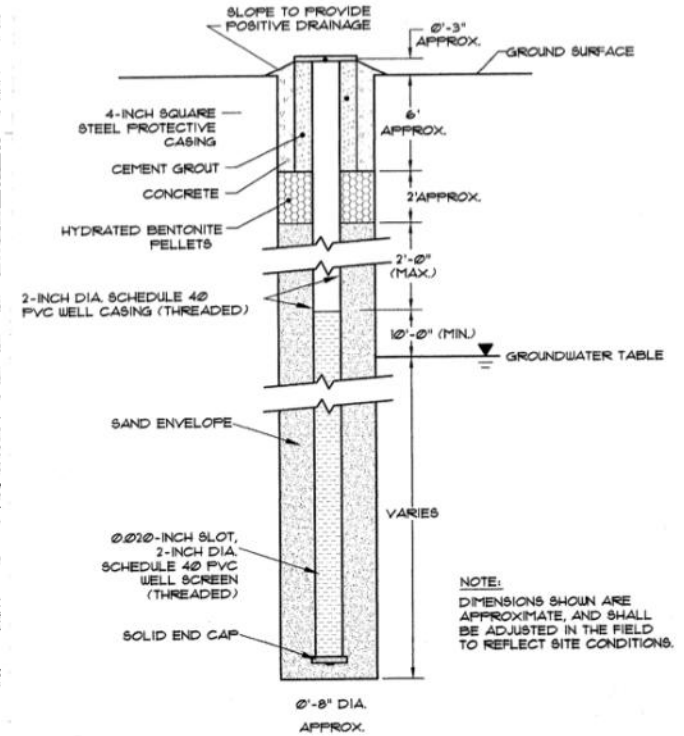
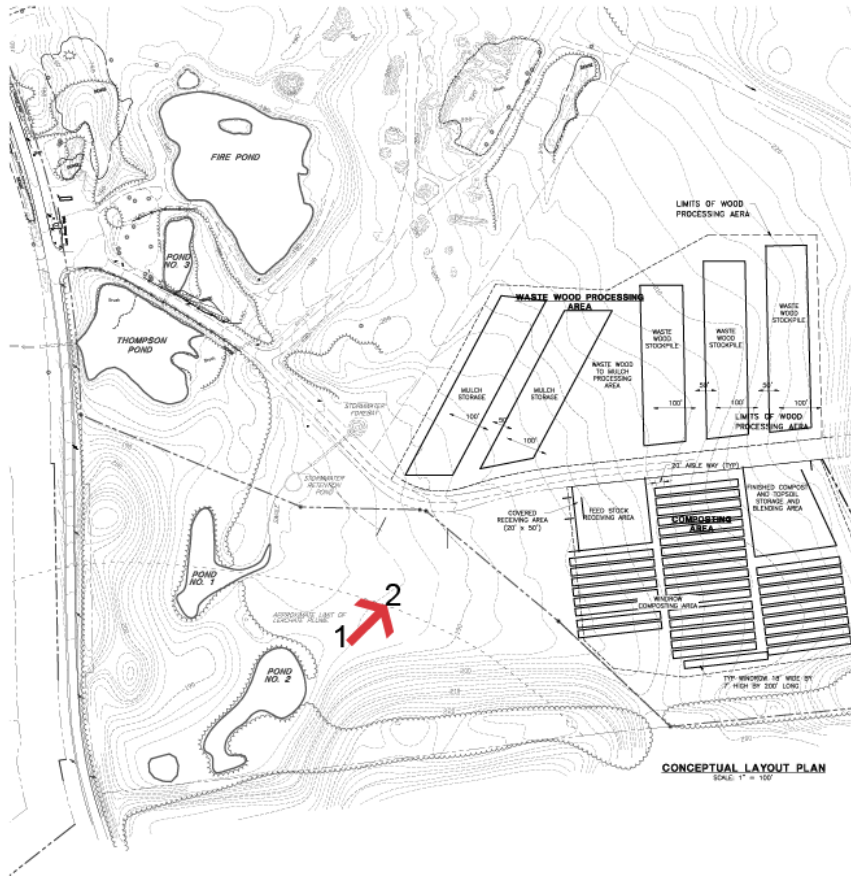
Except for Wind



Building #2



Monitoring Wells



NOTE:
DIMENSIONS SHOWN ARE APPROXIMATE, AND SHALL BE ADJUSTED IN THE FIELD TO REFLECT SITE CONDITIONS.

Equipment – Previously in Place

- Payloaders



- Windrow Turner



- Material Separator



Screening Plant



Acceptable Material

- Food processing waste
- Table scraps
- Dairy products
- Meat
- Soiled or waxed cardboard
- Paper



Unacceptable Material

- Plastic bags
- Plastic ties
- Plastic cutlery
- Plastic film
- "Biodegradable" plastic?
- Other inorganic materials



Receiving



Inclusion of waxed cardboard is important to some generators.

Material from Whole Foods



Material quality is key. Contamination can effect finished product quality, Processing costs and overall project economics.



Mixing to Adjust

- Carbon : Nitrogen Ratio
- Moisture Content
- Porosity

- Goals
 - No Odor
 - Minimize Nutrient Run-off

- Adequate supply of bulking agents is essential



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BECAUSE YOU FIND **WATER COOLER** CONVERSATIONS RIVETING

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Cedar Grove Composting fined \$119K for odors

Cedar Grove Composting, the region's largest processor of yard waste and food scraps, must pay \$119,000 in fines for odors from its Maple Valley and Everett composting facilities, a state hearings board has ruled.

By **Keith Ervin**
Seattle Times staff reporter

Cedar Grove Composting, the region's largest processor of yard waste and food scraps, must pay \$119,000 in fines for odors from its Maple Valley and Everett composting facilities, a state hearings board has ruled.

The Pollution Control Hearings Board upheld 17 violation notices issued by the Puget Sound Clean Air Agency in response to complaints by neighbors who said the smells forced them indoors and in some cases nauseated them.

But, noting the company has invested \$6.5 million in equipment and processes aimed at controlling the stench, the pollution board knocked \$50,000 off the original \$169,000 fine for those violations in 2009 and 2010.

"Although Cedar Grove expressed reservations about whether it was really the source of many of these odors, it still has moved forward in good faith to address these odor concerns," the three-member

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Odor complaints abound for Seattle's composter

Seattleites raise stink over compost odors

Posted: September 24, 2011 - 11:40pm

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Seattleites raise stink over compost odors

EVERETT, Wash. (AP) — A year after the city of Seattle required residents to recycle food scraps, the results have been impressive: in 2010, the city's contractor diverted 90,000 tons of Seattleites' banana peels, chicken bones and weeds out of landfills and converted that waste into rich compost prized in gardens.

But the process that helped the city set an all-time high recycling rate of 53.7 percent hasn't been without controversy.

Mixing in Ellington



Windrows



Final turn with payloader



Screening



Topdressing with finished Compost



Project Results to Date

- No odor issues
- No vector issues
- Ground and surface water
 - Data thus far indicates minimal or no impact



Small Volume Windrow Composting

Benefits

- Limited capital costs if incorporated into an existing facility.
 - Receiving building
 - Erosion control
 - Monitoring wells
 - Pad construction
- Economically viable as an add-on
- Easily scalable to a point
- Food waste accelerates the composting process
- Potential for creating higher value compost



Small Volume Windrow Composting

Drawbacks

- Probably not economically viable as stand alone project
 - Payloader
 - Windrow Turner
 - Plastic Separator
 - Screening Plant
- Limits to scalability
 - Odor potential especially when receiving and mixing
 - To increase volumes material needs to be sourced from a larger area, which increases hauling costs and impacts project economics.
- Proper siting is critical. The more food waste the bigger buffer that is required
- Future availability of bulking agents
- Contaminants

