

Biosolids Video Outline

- I. World population
 - A. Grows Daily
 1. Population Density.
 - a. Per Sq. Km./ Per Sq. mile.
 - B. The amount of human waste excreted.
 1. World population.
 - a. Largest Countries of the world from today to the estimations in the year 2050.
 - b. World vital events:
Per minute: 245 births
106 deaths
Per Second: 4.1 births
1.8 deaths
 2. US population
 - a. US vital events / Birth and death rates per minute.
 - b. What this means in biosolids volume.
- II. Biosolids
 - A. What happens?
 1. What happens after the flush?
 - B. Do you know what it is?
 1. Treated sewage sludge made into a product for recycling.
 2. The process of sludge. (Introduction to biosolids.)
 3. Sewage treatment through treatment plants.
 - a. Using a controlled environment.
 - b. Time/ temperature/ mixing
 - c. Treatment plants across the US.
 4. Interviews at local schools. Interviews at local collages. (What do young people know about biosolids?)
- III. Bad ways to dispose of sludge.
 - A. Landfills.
 - B. Ocean dumping—banned due to nutrients causing increased algae production—oxygen depletion at the cite.
 1. Overapplication.
 - a. Leaves a site contaminated with metals, or nitrogen, or both.
- IV. Good uses of biosolids.
 - A. Composting
 1. Most acceptable method of processing.
 2. Further reduces pathogens.
 - B. Palletizing.
 1. Heat and drying.
 - a. Further reducing pathogens.
 - C. Land Application/ Fertilizer.
 1. Farming and biosolids.
 - a. Saving farmers money: \$140/acre in fertilizer value.

- b. Value of biosolids material to agriculture, silviculture, and land reclamation efforts in terms of improved crop yields.
- 2. Detoxification, nourishment and sustaining vegetation.
 - a. Sustaining old denuded contaminated sites.
 - b. Landfill cover and vegetation.

D. Apposing arguments

- 1. Odors.
 - a. Various smells for various processing.
 - b. Overloading property/ Not incorporating
- 2. Cons against land application/ Fertilizers.
 - a. It may sound gross.
 - b. Industrial effluents/ Household wastes entering sewer systems.
 - c. Mandated pretreatment programs/ Sewage treatment processes. These might not be working!
 - d. Introduction of pharmaceuticals that have been ingested. No documented cases of toxicity damage to human health, livestock and the environment.

V. How this affects you.

A. You produce human waste.

- 1. What would you do if there were no treatment?
 - a. Waste at your own house.

B. Good uses should be promoted!!

C. The future and biosolids.

- 1. What will you do?