

Biosolids Land Application Report



April 4, 2008 – May 6, 2008

Report for the beneficial use land application of biosolids produced at the Wastewater Treatment Plant and stored on-site in 2 bunkers.

General information

The Biosolids was removed from the bunkers and hauled to four farm fields located in North Lawrence. Collaborating farmers: Mr. John Wise & Mr. Brian Pine.

Contractor: Nutri-Ject Systems Inc.

Training was completed & documented for all Nutri-Ject Systems employees for the following subjects before starting:

- Lawrence Utilities Management System (LUMS)
 - Policy
 - Contractor Responsibilities for Compliance and Hazard Communication Notification
- Biosolids Truck Hauling
 - safe handling precautions
 - truck hauling requirements
 - spill response procedure
- Biosolids Bunker Gate Tie Up procedure
 - Contractor Responsibility form
 - Individual signatures for the employees that will be around the bunker gate
- Land application rules and Expectations
- Bulk Biosolids Profile Sheet

SPRING 2008 BIOSOLIDS LAND APPLICATION TOTALS		
Days worked	15	
Complaints	0	Lessee contacted the police. After presentation of the biosolids profile sheet no complaint was filed.
Spills	0	
Acres applied on	200	
Cubic yards removed	4,142.4	
removal cost	\$ 11.55/Cubic Yard	
Total Cost of the project	\$ 47,844.68	approx. 35% of the PO

Land Application Process: Loading through soil incorporation



Public Awareness

Preceding Biosolids transporting, an email was sent to all interested parties notifying them of the start date, contractor's name, & general location of the farm fields.

Interested parties:

City Management:	Dave Corliss, Cynthia Boecker, Diane Stoddard; Dave Wagner; Mark Hegeman; Bobbie Walthall, Lisa Patterson; Jeanette Klamm
City police:	Shannon Parker
Streets Department:	Margie Baston
Dg. Co.	Keith Dabney
Dg. Co. Health Depart	Richard Ziesenis
KDHE:	Helen Holm

- Lawrence Journal World interview & article: Christine Metz met with Jeanette Klamm & Carolyn Woodhead to obtain the City of Lawrence perspective on Biosolids Re-use & to see how the City reuses Biosolids. They toured the facility and observed land application when it was underway. A balanced article in the Lawrence Journal World was run front page on April 15, 2008 entitled “City’s waste not wasted”.
- Morgan Powell Ph.D & DeAnn Presley (K-State Research and Extension) completed an in-depth tour of the Biosolids facility & observed the belt press operation, and the Biosolids handling from the storage bunker loading to hauling biosolids & the land application into the incorporation of the farmland. They are in the process of updating their Biosolids brochure and have toured 4 facilities to represent the different ways City’s handle their Biosolids produced. We have asked to review & comment on this brochure prior to publication.

Comments

Many favorable comments about the Biosolids quality:

- Land owner
- Farmers
- Contractor’s foreman & his employees

Generally the process from loading, transportation, land application, and soil incorporation was inspected twice a day during operation.

Problems encountered

- Weather-related delays
- Loader (hydraulic line broke & alternator went bad)
- Spreader (chain problems)
- Loader damaged the cement on the ceiling of the South bunker.
 - Nutri-Ject contracted with Comet Corporation to complete the repairs as required



Future operations

With several operational changes, the Biosolids cake is maintaining a 20 – 23 % Total Solids.



In terms of cost & safety - we are hauling less water which in turn: reduces the cost of transporting, and decreases the possibility of spills. However, it does decrease the capacity of the storage bunkers. A drier Biosolids tends to cone and not spread evenly. This allows approximately 13 - 15 feet in each bunker instead of 19 feet.



Possible Solution: Straighten the switching conveyor into a straight line & add a new conveyor (forward & backward capability) at the end that extends out into each bunker.

Effect:

- Straightening the conveyor that swivels will reduce the potential for conveyor failure.
- Coning would happen in the middle of the bunker instead of on the catwalk allowing the material the opportunity to spread more.

Fall 2008 next planned application

Carolyn Woodhead
Residuals Coordinator