

Municipal Sewage Sludge Biosolids Application in Illinois September, 2010

This is a brief overview of Illinois' municipal sludge application rules. It is not meant to cover all aspects of the regulations.

For specific questions on sludge application and up-to-date regulatory language, contact the Illinois Environmental Protection Agency at 217-782-0610. Current regulations are also listed under Part 391 at:

<http://www.ipcb.state.il.us/SLR/IPCBandIPEAEnvironmentalRegulations-Title35.asp>

In General

Municipal sewage sludge biosolids are generated during the treatment of domestic sewage in a treatment works. The Illinois Environmental Protection Agency (agency) governs the sludge application rules. The rules are found under Title 35, Subtitle C, Chapter II, Part 391 Design Criteria for Sludge Application. Federal regulations were also developed in 1993.

Municipalities have to get rid of sludge and often a private landowner is asked whether they would agree to have sludge applied to their land. The landowners are usually compensated for agreeing to allow the use of their property.

Permits

Persons applying sludge on land are required to obtain a permit unless exempted by 35 Illinois Administrative Code. All generators who want to land apply sludge need a generator permit. The sludge user also needs a permit if they apply more than 1500 dry tons per year or spread on more than 300 acres. A sludge user is defined as a person who obtains sludge from a sludge generator for application on his land or land under his control (for example, an agent or contractor applying the sludge). The user permit is separate from the generator permit. Both permits are issued by the IEPA. Generator permits are valid for 5 years and contractor permits are valid for 3 years.

Sludge permit applications must include, among other items, a sludge laboratory analysis sheet, agronomic calculations, a letter of acceptance by the site owner if the site owner is different than the sludge generator, and a sludge management plan narrative. The plan should include:

- The method of application such as liquid or dry sludge, incorporation or surface application and the equipment used;
- The sludge application site characteristics such as proximity to streams, wells and groundwater, soil types, slopes, runoff control, distance to dwellings and roads, crops and yields; and
- Contingencies such as differences in seasonal operations, method of sludge handling or storage, supporting calculations for storage facility operation during periods when sludge cannot be land applied, and the name, location and permit numbers of landfills used during contingency periods;

Application

Timing

Sludge cannot be applied to ice or snow-covered ground unless covered under emergency provisions through the permit. Sludge may be applied to frozen ground with a slope of 5% or less provided there is a 200 foot grassy area between the sludge application area and surface water or a potable water supply.

Sludge also may not be applied on land during precipitation or on land which is saturated or has ponded water. It is not recommended that sludge be applied on land when precipitation is imminent or which has received greater than 1/4 inch rainfall within the 24 hour period preceding the intended application time.

Slope of Land

Sludge cannot be applied without incorporation (injection, discing, or plowing) to farmland having greater than a 5% slope. Pasture/hay ground receiving sludge cannot be harvested or used for livestock grazing for at least one month after the application or until precipitation has washed sludge from the plants in areas where livestock would graze.

Lands That Cannot be Used

Sludge cannot be applied to land that contains a food grade crop.

Setbacks

There are setbacks that govern where an operator may apply sludge. Here are examples of some, but not all, of the setbacks:

- 200 feet from private water wells
- 400 feet from public drinking water supply well
- 200 feet from surface water or intermittent streams
- 20 feet from an occupied dwelling if the sludge is injected or immediately incorporated
- 200 feet from an occupied dwelling if the sludge is not injected or immediately incorporated
- 10 feet from a public road or outside roadway fence lines
- There is no setback from tile inlets or terrace inlets.

Sludge may not be applied or discharged to streams, waterways or floodplains having a return frequency more often than 10 years.

Storage

Off-site interim storage of dried sludge for less than 2 months is considered a temporary storage facility and does not require an agency permit. Off-site interim storage of dried sludge equal to or greater than 2 months is considered a permanent storage facility and does require an agency permit. Off-site interim storage of dried sludge shall not exceed 8 months. The off-site interim storage area shall: contain a fence to keep livestock out; post warning signs advising against trespassing; reduce visibility of storage sites;

maximize the distance between the site and any habitation; and use topographic features or wind breaks to take advantage of wind effects of dispersion and odor control. In addition, stockpiles have to be contained and runoff controlled, leachate has to be contained, stockpiles cannot be subject to flooding, and the sludge has to be isolated from commercial and residential developments.

Testing

Sludge that is land applied must be biologically stabilized, with the percent of solids at 65%. Sludge is sampled semi-annually or monthly depending on the permit. Sampling is done on nutrient value of the sludge, the percent of solids in the sludge, and on federally listed elements of arsenic, mercury, and selenium. State rules require testing for cadmium, zinc, nickel, lead, copper, and manganese.

Rate

In the first five years, nitrogen in the sludge is usually considered to be the limiting application rate factor. The maximum loading rates of sludge are based on the nitrogen required for a growing crop. After five years of application, the phosphorus level in the soil has to be monitored. Sludge application cannot continue if the plant available phosphorus content in the soil exceeds 400 pounds per acre for sandy soils or 800 pounds per acre for non-sandy soils.