
Detailed Fiscal Analysis

Sewage Sludge

Sewage sludge, also referred to as biosolids, is the material that is removed during the treatment of municipal wastewater. As the sewage sludge from wastewater treatment plants accumulates, it can be disposed of by several methods including land application, incineration, landfills, sludge-only disposal sites (i.e. lime lakes or monofills), or to larger treatment plants for processing. Sewage sludge may be treated or disposed. Treatment is defined as the preparation of sewage sludge for final use or disposal. This includes, but is not limited to, thickening, stabilization, and dewatering of sewage sludge. Disposal is defined as the final use of the biosolids. This includes, but is not limited to, land application, land reclamation, surface disposal, disposal in a landfill, or disposal in an incinerator.

Sewage Sludge in Ohio

The following tables are taken out of the 1997 Ohio Biosolids Management Report from Ohio EPA. These tables describe the amount of sewage sludge that is produced in the State of Ohio, the methods of disposal or reuse per Ohio EPA district, and the amount and sources of out-of-state sewage sludge.

There are several means by which Ohio municipalities dispose of or reuse their sewage sludge. The most widely applied methods include land application, land reclamation, incineration, disposal in a landfill, surface disposal, or disposal in a lagoon or surface impoundment.

Sewage Sludge in Ohio		
Disposal/Reuse Option	Dry Tons, 1997	Percentage of Total
Land Application	206,137	62.2%
Incineration	88,092	26.6%
Landfill	27,318	8.2%
Surface Disposal	1,653	0.5%
Other	8,346	2.5%
Total	331,546	100%

Ohio is one of the most diverse states, resulting from the high degree of variability in the topography, land use, geology, and population distribution. These factors impact how Ohio municipalities dispose of or reuse their sewage sludge. The following table reports the disposal or reuse practices of major NPDES discharge permit holders by Ohio EPA district offices.

Sewage Sludge Disposal and Reuse Methods, Dry Tons

	Land Application	Incineration	Landfill	Surface Disposal	Other
Central District	24,918	30,052	4,172	-	-
Northeast District	38,157	23,055	11,027	320	3,743
Northwest District	28,895	-	1,962	1,031	-
Southeast District	5,473	-	2,753	-	-
Southwest District	46,736	34,985	3,367	130	-

Entities responsible for the importation of sewage sludge generated outside the State of Ohio are required to have an approved marketing and distribution plan. Plan approval applications are reviewed in Ohio EPA’s Central Office with input from the appropriate District Offices. Currently, six entities are approved to market and distribute out-of-state sewage sludge in Ohio. The following table reports the name of the permittees, the quantity and quality of the sewage sludge that each permittee is allowed to distribute in Ohio, and the quantity that was brought to Ohio in 1997.

Out-of-State Sewage Sludge

Entity	EQ Sewage Sludge?	Permitted Quantity (dry tons/year)	Quantity Brought to Ohio in 1997
Wheelabrator Water Technologies New York Fertilizer Company (NYOFCO)	Yes	45,000	33,735.9
New England Fertilizer Company (NEFCO)	Yes	10,000	-
Wheelabrator Water Technologies (Baltimore Pelltech)	Yes	1,000	0
Lackawana Transportation (Wetzel County Compost)	Yes	1,500	0
Valero Terrestrial Corp. (Brooke County Compost)	Yes	15,000	70.1
Wheelabrator Water Technologies (Allegheny County Sanitary Authority)	No	20,000	9,601.3
Total		89,000	43,407.3

Fee Structure

All sewage sludge that is treated or disposed of in Ohio shall be subject to a Sludge Management Permit from the Ohio EPA. The purpose of the Sludge Management Permit is to monitor sludge and sludge materials and establish acceptable practices and pollutant levels in sludge and sludge materials. The net volume, net weight, quality, and pollutant concentration may be specified for the sludge or sludge materials that may be used, stored, treated or disposed of, and the manner and frequency of the use, storage, treatment, or disposal. The Ohio EPA may condition permits on the implementation of treatment, storage, disposal, distribution, or application methods and the filing of periodic reports on the amounts, composition, and quality of sludge and sludge materials that are disposed of, used, treated or stored. An approval of a treatment works sludge disposal program may contain any terms and conditions, including schedules of compliance.

This bill establishes a fee of \$3.50 per dry ton of sewage sludge that is treated or disposed of in Ohio. Ohio EPA will require seven to eight new full time equivalents (FTEs) to administer the sludge permit, having an annual cost of approximately \$560,000 to \$640,000. This per ton fee was determined by taking the estimated cost to Ohio EPA of running a biosolids program (\$560,000 to \$640,000 to fund seven to eight FTEs) and dividing it by the amount of sewage sludge generated or distributed in Ohio, based on 1996 data.

Fee Structure	
Fee Per Ton of Sewage Sludge, Treated or Disposed	\$3.50/dry ton
Cap on Fee Paid on Sewage Sludge that is Land Applied/Marketed and Distributed/Surface Disposed	\$20,000/year
Cap on Fee Paid on Sewage Sludge that is Incinerated	\$5,000/year
Cap on Fee Paid on Sewage Sludge that is Landfilled	\$5,000/year
Fee Reduction for the Production of Excellent Quality Sewage Sludge	35%
Minimum Fee to be Paid by Entities Required to Pay an Annual NPDES Annual Discharge Fee (Approximately 500 Facilities)	\$100
Late Fees	Additional 10%

Ohio EPA estimated that the funds generated annually by placing a \$3.50 per ton surcharge on sludge treated or disposed in Ohio is \$583,317 per year. Please see the following table for an illustration of the funds generated from the fee structure described above.

Funds Generated Each Year	
Funds Generated from Incineration Facilities	\$42,748
Funds Generated from Landfilled Sludge	\$72,350
Funds Generated from Land Applied/Surfaced Disposed Sludge (and other)	\$422,628
Fee Reduction for EQ Sludge	(\$37,409)
Additional Funds Generated from the Application of a Minimum Sludge Annual Fee	\$50,000
Funds Generated from Out-of-State Sludge	\$33,000
TOTAL	\$583,317

The fee structure includes a provision that sludge generators who transfer their sludge to another treatment facility, another POTW, or out of state without treatment, will not be assessed the \$3.50 per ton fee. The \$100 minimum fee will still be applicable to cover administrative processing and tracking costs at Ohio EPA. The reasoning for this approach is to avoid the double charging of sewage sludge that would otherwise occur. This approach also encourages the regionalization of sewage sludge treatment. Ohio EPA believes that regionalization is environmentally responsible in that it eliminates many small sources by combining them into larger, more manageable ones. This approach should also promote an increase in the quality of sewage sludge produced in the State by spreading the cost of improved treatment among many stakeholders.

Another issue regarding the fee structure relates to sewage sludge generators/preparers that employ multiple disposal options. For example, communities may apply sewage sludge to land, landfill, or incinerate various portions of the sewage sludge. Because more complex sewage sludge programs require more time and administrative work from a regulatory standpoint, each disposal/reuse alternative will be examined individually. For example, if a municipality applies, incinerates, and landfills its sewage sludge, and was subject to the cap fee for each of these disposal/reuse alternatives, that municipality would pay \$30,000 (\$20,000 for land application, \$5,000 for incineration and \$5,000 for landfilling) in annual sewage sludge fees.

Exceptional Quality Sewage Sludge

One of the provisions of the sewage sludge regulations under 40 CFR 503 is that two classifications of sewage sludge are defined; exceptional quality (EQ) and non-exceptional quality. Provided that applicable quality standards and management standards are met, both classes can provide plants with an inexpensive source of nutrients. The primary difference between the two classes is that EQ sewage sludge can be sold to customers much like a commercial fertilizer product. Authorization of EQ application sites by Ohio EPA is not required for EQ sewage sludge. However, achieving this level of quality often comes at higher capital and operational costs to the sewage sludge entity.

EQ sewage sludge must meet very stringent pathogen densities, pollutant concentrations, and vector attraction reduction criteria. As a result, EQ sewage sludge has fewer restrictions placed on its use. Unlike non-EQ sewage sludge, application sites do not have to be authorized by Ohio EPA. Adherence to typical isolation and crop harvesting restrictions are not necessary. Because EQ sewage sludge has typically been stabilized to a higher degree, there tends to be fewer associated nuisance odor complaints. These characteristics result in a lessened threat to the environment and less administration required for Ohio EPA. This is why the EQ sewage sludge has a 35 percent reduction on the total annual fee. In cases where one generator/preparer/distributor is subject to the land application cap, the 35 percent discount will be applied to the cap itself (i.e. an entity would pay 35 percent of \$20,000, which is \$13,000).

EQ sewage sludge that is generated and treated outside of the State, and contained in bags or other containers, is exempt from paying the annual sewage sludge fee. The primary reason for this exemption is that there is essentially no work for Ohio EPA associated with EQ sewage sludge distributed in bags. It is also logistically very difficult to determine if this bagged sewage sludge is actually used or disposed of in Ohio.

An annual fee reduction was not included for technologies that mix or blend other solid materials with sewage sludge prior to use or disposal. The primary reason was that if, through blending, the final product meets EQ standards, then the 35 percent fee reduction would be applicable. If EQ criteria are not satisfied, then Ohio EPA is left with that much more non-EQ material to regulate. That means more application sites to authorize, a greater potential for nuisance complaints to investigate, and more site tracking to conduct.

Ohio municipalities appear to be realizing that the creation of regional sewage sludge treatment facilities can help offset higher costs of sewage sludge production by spreading them over a larger population of shareholders. Regionalization can also provide benefits from an environmental standpoint. Replacement of many lower quality sewage sludge treatment operations with a few large-scale EQ operations help to promote the beneficial reuse of sewage sludge and improves the quality of sewage sludge that is introduced into the environment. Regionalization can be beneficial from a regulatory perspective in that technical and compliance assistance resources are more efficiently utilized on a few larger facilities than on many smaller ones.

Public Nuisance

If a sewage sludge permit is violated, or if sewage sludge is placed on the land or released in the air without a sewage sludge permit, it will be considered a public nuisance. Depending on the severity, duration, and public reaction of the violation, the Ohio EPA will follow the similar procedures as violations of an NPDES permit. The sewage sludge permit may be revoked, and/or the Ohio EPA may take action through enforcement orders, where a Notice of Violation may be sent, followed by Administrative Orders. If that does not work, the violator may be referred to the Attorney General for further action.

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