



Cooperatively promoting the environmentally sound recycling of biosolids and other residuals

Information Update: US EPA May Define “Sewage Sludge” as Solid Waste **July 20, 2009; updated August 25, 2009**

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On January 2, 2009, U. S. EPA published an advance notice of proposed rulemaking in the *Federal Register*, seeking comments on a proposed regulation to refine the definition of “solid waste” as it refers to non-hazardous materials, including sewage sludge or biosolids. The result of this action may cause the application of particular existing clean air and solid waste regulations to biosolids incineration and, some claim, possibly other methods of biosolids management.

Background

U. S. EPA’s Office of Resource Conservation and Recovery (ORCR, formerly Office of Solid Waste) is proposing this new, refined definition of solid waste partially in response to a court decision that requires EPA action by September 15, 2009. The core issue is whether or not sewage sludge combustion will be regulated under Section 112 of the Clean Air Act (CAA) or Section 129.

EPA stated the purpose of its current regulatory action in this way, “EPA now needs to articulate which nonhazardous secondary materials constitute solid wastes under RCRA Subtitle D so that EPA can establish appropriate standards under CAA sections 112 and 129 for units that combust secondary materials for the purposes of energy recovery or when used as an ingredient (*Federal Register*, 2009).”

Is “Sewage Sludge” Excluded From the RCRA Definition of “Solid Waste?”

The reason that sewage sludge has not been regulated under CAA Section 129 in the past seems to be because EPA has not in the past formally defined it as a solid waste under the Resource Conservation and Recovery Act (RCRA).

In February 2nd comments, the National Association of Clean Water Agencies (NACWA) argued that the RCRA definition of “solid waste” does not and should not include sewage sludge, because the definition specifically states that it “does not include solid or dissolved material in domestic sewage...” NACWA wrote: “Both Congress and EPA have stated that the Domestic Sewage Exclusion includes the sewage sludge processed at POTWs. After all, sewage sludges are simply the “solid and dissolved materials in domestic sewage” that are filtered and extracted during the wastewater treatment process.”

However, EPA argues that the exclusion was meant to apply only to “solid and dissolved materials in domestic sewage” as prior to entering a treatment system or facility. This way, potentially hazardous materials in domestic sewage are presumably going into a process that deals with them. But, if the treatment facility does not reduce the toxicity of the material and it becomes a significant part of sewage sludge, then it should be considered solid waste, argues EPA, so that it will be properly managed under stricter solid waste regulations.

The outcome is that ORCR is likely to extend the RCRA definition of solid waste to include sewage sludge for the purposes of regulation, under the Clean Air Act, of sewage sludge burned in

incinerators. As discussed below, NACWA is concerned that this change in definition may affect other uses or disposal options for biosolids/treated sewage sludge.

Determining Whether Sewage Sludge is a Legitimate Alternative Fuel or Ingredient

EPA's current proposed rule-making hinges on defining whether various "secondary" materials – such as sewage sludge – are legitimate resources being recycled as valuable commodities or are merely being "discarded." If something is considered discarded, it fits the definition of a solid waste. For an alternative fuel or ingredient to be considered "legitimate" – and thus *not* defined as solid waste – they must meet three criteria:

1. They must be handled as a valuable commodity.
2. They must have meaningful heating value or provide a useful contribution to a final product.
3. Any contaminants in the material must not present significant risk when they are released during combustion (based on a qualitative evaluation), or contaminants must not be present in significantly higher concentration in the final product (that contains the material) than in a traditional product.

EPA's developing perspective seems to be that, in general, sewage sludge incinerators have been intended to dispose ("discard") sewage sludge. If so, that sewage sludge fits the definition of solid waste. Even if energy is recovered from combustion of that sewage sludge, the material would still be considered a solid waste, because, in most cases, the main purpose of the combustion process is for disposal, not energy production.

If this EPA perspective is incorporated into regulations to be promulgated by September 15th, the challenge for sewage sludge incinerators then becomes demonstrating that sewage sludge is a legitimate alternative fuel and not something that is just being "discarded." For older incinerators, this may be hard to do. However, there are biosolids products being produced today that may legitimately meet the above criteria, such as heat-dried pellets used for fuel in cement kilns or other energy-producing facilities. Presumably, these products would not be considered solid wastes under the new definition, and the facilities in which they are combusted would not fall under Section 129 of the CAA (unless the facility also burns solid waste). Whether or not EPA will support this distinction is unclear.

The Impact of Clean Air Act Section 129 vs. Section 112

The ORCR's refined RCRA definition of incinerated sewage sludge as a solid waste will result in the EPA Office of Air and Radiation requiring sewage sludge incinerators to comply with the standards of the CAA Section 129, which applies to all materials defined as solid wastes. These standards are stricter and will apply maximum achievable control technology (MACT) standards to each individual sewage sludge incinerator.

According to the January 2nd *Federal Register* notice, Sections 112 and 129 "differ in three primary respects:"

First, CAA section 112 requires that MACT standards be established for major sources of HAP (hazardous air pollutant) emissions, but provides discretionary authority to establish MACT standards for area sources of HAP emissions. On the other hand, the CAA section 129 MACT standards apply across the board to all solid waste incineration units in a given category regardless of size. Second, CAA section 129 requires that emission standards be set for specific HAP and certain pollutants that are not classified as CAA section 112 HAP. Specifically, CAA section 129 requires numeric emission limitations for the following nine pollutants:

Cadmium, carbon monoxide dioxins/furans, hydrogen chloride, lead, mercury, NOX, particulate matter (total and fine), opacity (as appropriate), and SO2. The CAA section 129 pollutants listed above represent the minimum that must be regulated; EPA has the discretion to establish standards for other pollutants as well. Third, CAA section 129 includes requirements for operator training, pre-construction site assessments, and monitoring that are not included in CAA section 112.

For some sewage sludge incinerators, it could be a costly challenge to meet the stricter Section 129 air emissions standards. This would be especially true for multiple hearth incinerators (MHIs), *if* the MACT standards were set based on the pool of all sewage sludge incinerators; in that case, the standards would be significantly influenced by inclusion of more modern, cleaner-burning fluidized bed incinerators.

Will Other Forms of Biosolids Management Be Affected?

There is some question, according to NACWA. ORCR stated in their January 2nd *Federal Register* notice:

We envision that a Subtitle D definition of solid waste that could result from this rulemaking effort would not impact/affect any other types of management activities for these materials, such as landfilling, composting, etc., and as such, would have no impact at the Federal level on the Subtitle D program.

But, even if ORCR has no *intention* of impacting other biosolids management options, there could be unforeseen impacts, according to NACWA: there are many diverse regulations that reference the definition of solid waste and regulate materials based on whether or not they are defined as solid wastes.

For example, some states may link their management requirements for sewage sludge and biosolids to the federal definition of what is defined as a solid waste. If, because of this federal action, sewage sludge and biosolids are suddenly defined as a solid waste, then the biosolids management programs in those states – perhaps including land application programs – may suddenly be subject to a different set of state laws and regulations. Of course, any state that already treats sewage sludge as a solid waste will probably not be impacted; in the North East, this is the case in Maine, New York, and Vermont. And, in reality, the chances are small that any state (or EPA, for that matter) would want to impose a second set of regulations on sewage sludge management (which is already thoroughly regulated by the federal Part 503 and similar state regulations).

Another concern is whether anaerobic digester gas will be considered a legitimate alternative fuel and not a solid waste. Traditionally, anaerobic digesters were built to reduce the volume of sewage sludge; this could be seen as a method of discarding the material. Today, however, digester gas from anaerobic digestion is valued as a commodity, and systems are designed to contain it, handle it as a valuable commodity, and utilize it for energy. It is reasonable to argue that sewage sludge and digester gas in such systems should *not* be considered discarded and should not be defined as solid wastes.

What's Next?

In its comments to EPA, NACWA argued that sewage sludge is adequately and comprehensively regulated under the Clean Water Act, through the Part 503 regulations. “EPA need not look beyond

the CWA for its authority to comprehensively regulate the use and combustion of sewage sludge consistent with the best available scientific information” (NACWA, 2009). They stressed that air pollutants from sewage sludge combusted in incinerators are already controlled by Part 503, and “If CAA regulation is required, NACWA prefers regulation of SSIs under Section 112.”

Apparently, EPA did not agree.

NACWA is following up with EPA in hopes of ensuring that other biosolids management options will not be impacted, intentionally or not. NACWA also plans to provide input in the development of any CAA Section 129 standards for air emissions from sewage sludge incinerators.

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Sources

National Association of Clean Water Agencies, 2009. “Comments...on U. S. EPA’s Advanced Notice of Proposed Rulemaking, 74 Fed. Reg. 41 (January 2, 2009) Seeking Input on Defining ‘Solid Waste’ as it Applies to Non-Hazardous Materials,” dated Feb. 2, 2009.

National Association of Clean Water Agencies, 2009, communications from C. Hornback.

Federal Register, 2009: 74 Fed. Reg. 41 (January 2, 2009), available at <http://edocket.access.gpo.gov/2009/pdf/E8-30987.pdf>

Communications with Jeff Fowley, Esq., Hazardous Waste Section, U. S. EPA Region 1.

About NEBRA

The North East Biosolids and Residuals Association is a 501(c)(3) non-profit professional association dedicated to advancing the recycling of biosolids and other organic residuals in New England and eastern Canada. NEBRA membership includes most of the environmental professionals and organizations that produce, treat, test, consult on, and manage the beneficial uses of biosolids and other large volume recyclable organic residuals in this region. NEBRA is funded by membership fees, donations, and project grants. It is directed by a volunteer Board of Directors of professionals from MA, ME, NB, NH, and VT. NEBRA’s financial statements and other information are open for public inspection during normal business hours. Information requests and memberships are welcome from anyone: info@nebiosolids.org or 603-323-7654.