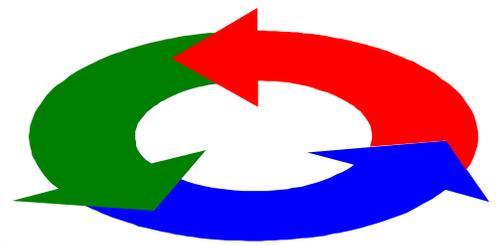


# Amendments



Improving Awareness & Advocacy of the Michigan Biosolids Program

Volume 7, Fourth Quarter

October, 2006

## MSU Ag Expo 2006

On July 18-20, 2006, The Michigan Biosolids Team displayed at this annual exposition. The three days of expo brought in over 15,600 visitors (*MSU office of communications*) as we had a constant stream of people at our booth at times, not only to grab water and popcorn, but to pick up information and sign up to receive biosolids. We had 18 farmers sign up to be contacted to receive biosolids. We would like to thank everyone who helped out at the Expo and look forward to 2007.



Our tent and display.

## Michigan News

### Toronto's sewage sludge may go into lake 'Stinkiest stuff'

**James Cowan, National Post  
Thursday, August 03, 2006**

TORONTO - A Michigan landfill's decision to no longer accept sewage sludge could force Toronto to dump tons of human waste into Lake Ontario, a court heard yesterday. City lawyers appeared in Ontario Superior Court yesterday seeking an injunction to compel Republic Services to continue processing Toronto's sludge for the next 90 days. The company stopped handling the treated human waste at Carleton Farms, a Detroit-area landfill, on Aug. 1. While a pair of contracts signed last week will divert half of the

160,000 tons of sludge produced by the city annually to new sites, lawyer Frank Newbould said the city could still be facing a crisis if Republic does not reopen its gates. "There is no guarantee the city will be successful in signing additional contracts," Mr. Newbould said. "The only alternative is to dump it into Lake Ontario or put it on the land near Ashbridge's Bay [water-treatment centre]." Under the deals signed last week, the city will send 50,000 tons this year to GSI Environment Inc. and 20,000 tons to Ferti-val Inc. Mayor David Miller and Shelley Carroll, the works committee chairwoman, have both told reporters that those deals bought Toronto six months to find a home for its remaining sludge.

But Mr. Newbould said Toronto still has only five days of emergency storage capacity. He said the situation will be "nip and tuck" as the city awaits the court's decision, which is expected this week. "If we'd solved the problem, we wouldn't be here," Mr. Newbould told the court. "They're working night and day to get the problem solved, but they haven't." Mr. Newbould said Toronto produces as many as 15 truckloads of sludge each day, but Ferti-val is able to handle just two trucks and GSI Environment can take only six or seven loads. While some of the leftover sludge can be used for agricultural purposes, the remainder must be kept in storage. Sam Rickett, Republic's lawyer, challenged his opponent's warnings of an impending crisis. Mr. Rickett said it was unlikely both Mr. Miller and Ms. Carroll would lie to the media. "If elected officials were telling us that we have six months, that the short-term is taken care of, and then turned around and broke the law by dumping the stuff in the bay, that would be really remarkable," Mr. Rickett said. He argued the city is attempting to save itself at the expense of Michigan, adding it would be politically unwise for a Canadian court to order waste be shipped to the United States. "What [Mr. Newbould] is asking you to do is foist this environmental disaster on Michigan instead of Toronto," Mr. Rickett said. The Michigan Department of Environmental Quality ordered Republic to stop accepting sludge at Carleton Farms following numerous complaints. Toronto argues the material should now be sent to Brent Run, another landfill operated by Republic in Michigan. According to Mr. Newbould, Republic is contractually obligated to accept the sludge at Brent Run. In response, Mr. Rickett argued that Republic's contract explicitly addresses only garbage shipped from the city's seven waste transfer stations, not sludge coming from a water-treatment centre. He said Republic attempted to broker a separate contract for sewage sludge, but city officials repeatedly refused. "This is the stinkiest stuff you can imagine," Mr. Rickett said. "If we were going to take it, we would have something signed."

While Mr. Newbould admitted waste from Toronto's water-treatment centre was not addressed in the initial contract, he argued it has been added by a subsequent agreement. He noted sewage sludge is included in the contract's definition of waste.

[jcowan@nationalpost.com](mailto:jcowan@nationalpost.com)

#### WHAT IS SLUDGE?

Sludge is a byproduct of the water treatment process. When wastewater arrives at a treatment plant, any solids are allowed to settle and drop to the bottom of large collector tanks. The solid material is then siphoned off, pressed to remove as much water as possible, and shipped to another site. As much as 50% of the city's sludge is used as agricultural fertilizer while the rest is shipped to landfill. The city's capacity to store sludge varies with the weather. During periods of heavy rain, the collector tanks become filled with water and there is not as much room to store the sludge itself. Toronto sends between 150,000 and 160,000 tons of the sludge -- otherwise known as biosolids -- to landfills each year.

Ran with fact box "What Is Sludge?" which has been appended to the story.

© National Post 2006

Copyright © 2006 CanWest Interactive, a division of CanWest MediaWorks Publications, Inc.. All rights reserved.

### **Septic situation: New regulations to affect septic waste haulers**

By Rick Charmoli, Cadillac News

In the worst of the winter, Jack and Nancy Johnson are enjoying the warmth and sun of Florida. The rest of the year, however, the Johnsons are involved in a dirty business. The couple owns Johnson Septic Tank Service in Manton. For most of the year, Jack Johnson deals with things most people would want no part of, septic tanks and their contents.

Since 1972, Johnson has been in the septic hauling business and over the years he said there has not been that much change in how he has done his job. "My wife's stepdad used to do it. I built a pump truck up and started doing it because there was a need in the area. I think there are currently only three licensed pumpers in Wexford County," Johnson said.

Click Here for Video Beginning this fall some new regulations will take effect and will have some impact on haulers across the state. The law is Part 117 - Septage Waste Servicers, Public Act 381 of 2004, and Title 40, Code of Federal Regulations, Part 503. Michigan Department of Environmental

Quality Septage Program Coordinator Matt Campbell said the new regulations are to help the state be within the requirements installed by the federal government. The MDEQ Water Bureau administers the Septage program with the assistance of participating county health departments. "Title 40 CFR, part 503 is the federal law and the name is standards for the use or disposal of sewage sludge. Now it is called Biosolids," Campbell said. "We had an old law in place

in 1986 and the feds came out with their law in 1999 which made ours obsolete. We ended up rewriting the law amending it to adopt the federal statute. It was signed on Oct. 12 of 2004."

Septage is spread on various land including agricultural lands used in the production of animal feed as well as crops for human consumption. There different regulations for different types of land, Campbell said.

"You can use the septage for the crops for human consumption but have to wait 30 months. The reason is because of the potential pathogens that could make you or I sick," he said. "You can either incinerate it at great cost or put in a landfill at a great cost. Wouldn't it make more sense to recycle on the land?" There are two big changes that are the result of these new regulations which will begin on Oct. 12 of this year, according to Campbell.

The first has to do with the spreading of septage or the liquid and solid material periodically removed from a septic tank, cesspool, or portable toilets. The second has to do with screening of septage. "This year on Oct. 12 there are two big milestones. Winter applications are no longer allowed when the ground is frozen. The other thing is haulers will have to screen all septage waste so it does not have all the trash that some people flush down the toilet," Campbell said. "You can apply in the winter if the ground is not frozen." Since the Johnsons travel to warmer climates in the winter time, the new regulations will not have too big of an impact on their business.

That being said, Johnson is currently in the process of constructing a screening tank with the new 3/8 inch slot which will keep debris like toilet paper and other things out of the septage prior to spreading.

Although Johnson said he does not anticipate the new regulations having a big impact on his business, he did think it might not be the same for the other haulers in the area. This could include installing a storage tank.

"It is a big expensive deal for the ones who are putting in the tanks. For the ones staying here over the winter," he said. "They do have an advantage on me. If there is rainy weather they can pour it in the tank. They have a 20 year guarantee that they don't have to go to a sewage treatment plant to dump. They get to use the tank." The three waste water treatment plants near Cadillac currently accept septage. They are Baldwin Municipal Treatment Plant, Betsie Lake Utilities Authority Waste Water Treatment Plant and Grand Traverse County Septage Treatment Facility.

Cadillac City Utilities Director Larry Campbell said the Cadillac Waste Water Treatment plant does not accept septage. He also said that he does not expect that the plant will in the near future either. "We do not accept septage at our plant. Some plants do. There is a Biosolids program," Larry Campbell said. "It is the waste product of treatment. We have tighter rules and haven't been able to apply in the winter for about five years. They are regulated by the EPA as well as from the state." Like the septage, Biosolids are applied in the spring and fall before and after the planting of crops.

The DEQ encourages the use of Biosolids, also known as sewage sludge, to enhance agricultural and silvicultural production in Michigan. Almost all Biosolids are land applied in Michigan and are used to grow crops on sites at

agronomic application rates approved by the DEQ. Biosolids also are used to provide nutrients and soil conditioning in mine reclamation programs, tree farms, and forest lands, according to the DEQ.

For more information about septage or Biosolids go to [www.michigan.gov/deq](http://www.michigan.gov/deq).  
[rcharmoli@cadillacnews.com](mailto:rcharmoli@cadillacnews.com) | 231-775-NEWS (6397)

## National News

### Cold can't stop Alaska sewage composting

By DAN JOLING, Associated Press Writer  
Sat Aug 12, 11:49 PM ET

Environmental consultant Mike Pollen remembers standing on a pile of sewage sludge composting outside the Fairbanks treatment plant on a November day in 1997. The temperature was 40 degrees below zero but his feet were warm. Then sweaty. Then uncomfortably hot inside his insulated rubber boots. "They felt like they were going to melt," he said. He figures there was a 180-degree difference between the compost cooking at his feet and the frosty temperature freezing his head. Prevailing wisdom said sludge composting wouldn't work north of North Dakota. Pollen, the author of several wastewater system training manuals used in Alaska, remembers turning to a utility official and remarking, "You know what you just did? You just rewrote the textbook."

Over the years, utility officials in the community 120 miles south of the Arctic Circle continued "aerated static pile composting" and now turn waste from 87,000 residents into a product so highly desired they can't make enough to satisfy requests from gardeners and landscapers who want to amend their sub-Arctic soil. "It's something we think is a big hit," said Dave Dean, support services manager for Utility Services of Alaska. The compost, cooked in beds bigger than football fields, has the Environmental Protection Agency's highest rating. Cooperative extension officials recommend it for growing vegetables as well as flowers and grass. The price is right — just \$15 per pickup load or \$5 per yard dropped into dump trucks — and it's free to anyone with a shovel and a trash can.

But merely getting sludge off the premises has been a triumph for the second largest community in Alaska, where winter routinely lasts seven months and the severe cold can make life miserable for microbes.

Sewage sludge is the solid material removed from water that flows into a treatment plant — 15 gallons at a time from a dishwasher, 31.5 gallons per 6.3-minute shower, 1.5 gallons per flush. Treatment plants strive to separate solids from liquids, then deal with each separately. Rich in nutrients, raw sludge also can be filled with dangerous pathogens or heavy metals that must be addressed before it can be applied to fields, burned, or even buried in a landfill. There are plenty of ways to neutralize human waste but utility companies are constrained by time, space and money. If they choose a process that's slow, they end up stockpiling sludge, where it's attacked by anaerobic bacteria that produce offensive odors. For many aerobic processes,

abundant space is needed, unless a utility has cash for equipment that can speed or automate decomposition. The Fairbanks plant itself is designed for the cold. It's one of the few in the country that's fully enclosed, allowing treatment in huge tanks all year round. The plant pumps pure oxygen into its digester, speeding the work of helpful bacteria that turn raw sludge into digested sludge.

In the early 1980s, when the EPA enforced new water quality laws, Fairbanks was banned from hauling digested sludge to its landfill. The utility, then owned by the city, instead merely stored it outside the plant.

When the utility ran out of storage space, it built a lagoon with 20-foot high walls. That filled up too, and utility officials launched a half-dozen attempts to address their sludge trove. A contractor burning pure sludge produced putrid clouds that hung near the ground during winter temperature inversions. Operators tried mixing sludge with lime, which neutralized the pathogens but made a product that had the consistency of toothpaste and wouldn't mix with soil. Finally, just before the utility was sold to private investors, operators began experiments with composting. Digested sludge is run through a press to mash out water. Still, the sludge is 80 percent liquid when it's moved outside by conveyor to a dump truck.

That's where Jeff Karrick, one of three full-time compost operators, comes in. Karrick is a master of mega-mixology with a front-end loader, his measuring cup a 4-yard bucket, his "bin" the flat ground outside the plant.

Like any home composter, he mixes digested sludge, a "green" material rich in nitrogen and phosphates, with a carbon source that feeds bacteria, provides bulk to let in air and absorbs moisture from the sludge. The utility uses fresh wood chips obtained from the only sawmill in the Fairbanks North Star Borough, plus partially decomposed wood chips screened from older compost piles. Karrick dumps 16 yards of used wood chips onto 16 yards of new chips, then adds 14 yards of sludge. With his heavy equipment, he attacks the pile from all sides, lifting, dropping and mixing until the material is homogenous. Then, on top of perforated pipe that delivers air, he stacks the mix against the main pad, creating a massive 9-foot-high sludge and wood chip cake that when completed will be 120 feet wide and 360 feet long. Operators frost the top and sides with 2 feet of composted material. The topping keeps odors and nasty clouds of blowflies at bay.

"That's our biofilter," Karrick said. The extra layer is also the key to the success of cold weather composting, said Nora Goldstein, executive editor of BioCycle magazine and a member of the Water Environment Federation, a national nonprofit organization focused on clean water. In the extreme cold, Goldstein said, bacteria could slow or shut down. That's not bad, unless it forces a utility to stockpile sludge. "So much of that depends on the composition mix and the insulation of the pile," she said.

Temperature probes detect some cooling in the coldest weather but extra fresh wood chips keep the pile hot enough to let operators add to the pad all winter long — and never stockpile sludge.

EPA requires the compost to cook at 104 degrees for 14 consecutive days. For three consecutive days, the temperature must reach at least 131 degrees so pathogens

will be killed. The highest temperature recorded in a Fairbanks pile was 206 degrees. "I'm thinking of digging a hole and dropping a pig in there," Karrick joked. When the piles attain the required temperatures, the stack — now just 8 feet tall because of the shrinkage in the composting process — is run through a screening machine to take out wood chips that didn't process. EPA allows up to 1,000 fecal coliform bacteria per gram dry weight of compost. Tests of finished compost often don't detect any. Fairbanks has little manufacturing and solids entering the plant contain little heavy metal such as arsenic and lead. The official EPA rating for the compost is "exceptional quality." The product has been around long enough that most gardeners have overcome their repugnance of using a product made from human waste. Michele Herbert, land resources agent for the University of Alaska Fairbanks Cooperative Extension Service, recommends the compost to gardeners and has used it herself to grow vegetables, mulch perennial beds and landscape. "It's crazy, the stuff is so good," she said. In contrast, the city had to pay more than \$400,000 to neutralize and move the 50,000 cubic yards of sludge that had accumulated over 20 years before a solution was found. Dean, the utility support services manager, said the company is not making money off compost. It charges enough to defray its cost of loading. But operators are clearly proud that they've solved their sludge problem by taking something nobody wants and turning it into a desirable commodity.

On the Net:  
Utility Services of Alaska, Inc.: <http://www.akwater.com/>

**Per the US Environmental Protection Agency's (EPA) Toxics Release Inventory (TRI), every year millions of pounds of hazardous chemicals are being discharged to publicly owned sewage treatment works (POTWs).**

The wastewater treatment process reconcentrates most of those pollutants in the sewage sludge "biosolids". According to the General Accounting Office, the TRI reports less than 10% of the actual pollution discharged to air, land, water and POTWs, depends entirely on "self-reporting" and tracks only a few hundred of the 90,000+ chemicals in industry and commerce today. Industrial pretreatment programs are not being strictly enforced for fear of increasing the hazardous waste disposal costs which could drive industries (and jobs) out of the USA to developing countries where labor and environmental laws are weak or non-existent. Federal laws permit every business and industry in the country to dump 33 pounds of hazardous wastes into public sewers each month with no reporting requirements [40CFR 403.12P)(2)]. Composting sewage sludge "biosolids" reduces pathogens but does not eliminate most toxic pollutants. A peer reviewed article by Ellen Harrison, et al, Cornell Waste Management Institute, to appear in the Elsevier journal Science of the Total Environment, details the toxic organic (carbon based) chemicals in sewage sludge

which can be at such high levels that they exceed the EPA's Superfund Soil Screening Limits (SSLs). "Data were found for 516 organic compounds which were grouped into 15 classes. Concentrations were compared to EPA risk-based soil screening limits (SSLs) where available. For 6 of the 15 classes of chemicals identified, there were no SSLs. For the 79 reported chemicals which had SSLs, the maximum reported concentration of 86% exceeded at least one SSL. Eighty-three percent of the 516 chemicals were not on the EPA established list of priority pollutants and 80 percent were not on the EPA's list of target compounds. Thus analyses targeting these lists will detect only a small fraction of the organic chemicals in sludges."

Classes of chemicals found in sewage sludge "biosolids" which exceeded the EPA's Superfund Soil Screening Levels include Aliphatics, Chlorobenzenes, Monocyclics, Nitrosamines, Pesticides, Phenols, Phthalates and PAHs. None of these chemicals in sewage sludge are monitored or regulated by the EPA. European countries are rapidly discontinuing land application of sewage sludge and moving to high-tech, non-polluting waste-to-energy solutions which utilize sludge as a resource, including biomass, pyrolysis, gasification, etc. If it costs society a bit more to properly dispose of toxic urban and industrial wastes, so be it. We are not a Third World country and we should not be dumping chemically contaminated sewage sludge on uncontaminated agricultural land in Rural America.

Helene Shields, Alton, NH

**Response from Dr. Al Rubin**

From: "The Rubins" <[rubinhial@cox.net](mailto:rubinhial@cox.net)>  
To: "US Composting Council Compost Discussion List" <[compost@composter.com](mailto:compost@composter.com)>  
Sent: Thursday, June 22, 2006 11:00 PM  
Subject: Re: [USCC] Chemical contamination of sewage sludge "biosolids"

Ms. Shields:

It appears that Ms. Harrison has taken information on US EPA's Soil Screening Limits (SSLs) for use in EPA's Superfund Program totally out of context by trying to compare these SSLs to EPA's Part 503 Standards for the Use or Disposal of Biosolids and implying that the Part 503 Standards should have numerical standards for every pollutant for which there is a SSL. While I was employed at EPA working on the Part 503 Standards over the course of nine years, this issue arose several times and, by consensus between EPA's office of Water (the Part 503 Standards) and the Office of Emergency and Remedial Response (Superfund SSLs), the following position was developed: Staff at both offices recognized that the SSLs were applicable only to Superfund sites whose characteristics were totally different than agricultural sites where biosolids were land applied under the provisions of the Part 503 and State biosolids standards. For example: SSLs for potential Superfund sites are applied usually to barren and/or highly contaminated soils in which a main exposure pathway is

assumed to be significant consumption of soil at the site by children and adults. Very little field data is used in the risk assessment algorithm to calculate these SSLs. Instead, worst case assumptions such as the bioavailability of the pollutant in the soil upon soil ingestion are made. In contrast for biosolids and the Part 503 Standards, up to 15 pathways of human and environmental exposure are evaluated and field data on pollutants' bioavailability, mobility, persistence, actually toxicity in the terrestrial environment are used to establish the Part 503 Standards. The Part 503 Standards use conservative assumptions when field data is insufficient but there is no need to use in an unscientific matter many of the worst case assumptions that are used to calculate the SSLs of the Superfund program. Even of greater importance, when biosolids are applied at agronomic rates as the Part 503 Standards require there is approximately a 1/200 dilution of the biosolids when placed on the receiving soil and incorporated. Even where biosolids or biosolids compost is top dressed onto receiving soils without immediate incorporation, long term environmental processes such as soil weathering and irrigation result in significant dilution of the applied biosolids. Whatever trace pollutant concentrations existed in the biosolids before land application are reduced by up to a factor of 200 after land application and incorporation. Attempting to apply the SSLs to the straight biosolids would constitute sophistry at the highest level. Rather, try comparing the SSLs to the resultant pollutant concentrations after biosolids land application and soil incorporation. Even then, one would not be comparing "apples to apples" for the reasons given above. I could go on and give additional reasons why the SSLs and the pollutants that they apply to are in no way appropriate for application to biosolids or making a comparison to the Part 503 Standards.

I close with a statement made by the National Research Council when they reported on their evaluation of the Part 503 Standards to USEPA in July of 2002. While the NRC Report acknowledged that there is some uncertainty remaining on some of the technical underpinnings of The Part 503 Standards, "there is no evidence that the Part 503 Standards have failed to protect public health and the environment". As a note, Ms. Harrison was a member of the NRC panel that produced the Report that contained this statement.

I trust that some of my former EPA colleagues from both the Office of Water and the Superfund program are on this list serve and will also respond to the issue raised by Ms. Shields.

Cheers

Alan B. Rubin, Ph.D.

## Biosolids Conference 2007

**Mark your calendars!** The Michigan Biosolids Teams has scheduled the 2007 Conference for **Wednesday, February 28, and Thursday, March 1, 2007**, at the McCamly Place Hotel in Battle Creek, Michigan. More information to follow!

*This Amendments Newsletter was brought to you as part of the Michigan Department of Agriculture's contribution to the Michigan Biosolids Team. Any questions, concerns, comments, or contributions to this newsletter can be made to Steve Mahoney at 517-241-2508 or [mahoneys@michigan.gov](mailto:mahoneys@michigan.gov). The Team members thank you for your continual support.*

## Calendar of Events

### Michigan Biosolids Team Upcoming Meetings

Thursday, October 12, 2006, 10:00 a.m.

Location: Cadillac, Michigan

Thursday, November 9, 2006, 10:00 a.m.

Location: South Clinton County CWF  
DeWitt, MI

Event: Annual Holiday Pot Luck

