BIOSOLIDS DIGEST
FIELD GREEN® The wiser fertilizer™
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Biosolids in High Demand, but in Short Supply

At WLSSD, we find ourselves in an unusual situation. Our Field Green® biosolids are typically in high demand by local farmers, and we tend to be able to meet that demand fairly well. That isn't the case this year. We are currently scheduled out for land applications through the 2022 crop year; the earliest we can schedule new applications will be the summer of 2023. The exceptions to that timeline are farms that qualify for winter applications and farms accessible during spring road restrictions.

Reduced input means reduced output

The closing of Verso's Duluth paper mill in mid-2020 significantly reduced the amount of daily flow to WLSSD's regional treatment plant. Verso's wastewater made up about 15% of the daily flow. The reduced influent means less water to clean, but means less biosolids, too. We are producing biosolids at a rate of 1,500 to 1,700 tons per month, rather than the more typical 2,000 to 2,200 tons per month when Verso was fully operating.

Nitrogen content is lower, too

The amount of nitrogen in our biosolids has been lower than usual, about half of what it was when Verso was in full operation. Biosolids are land-applied at the agronomic rate of the nitrogen needs for the specific crops on each field. We have been applying more biosolids in order to meet that rate, which is close to double the usual application rate. But get a whiff of this—we are finding that the odor associated with the biosolids produced currently is mild, and more earthy than that of an ammonia-like odor that is common to biosolids.

So where does this leave us? Reduced production of biosolids, and the need to apply more at each site, has led to an extremely short supply of this valuable fertilizer—to the tune of about half of what we used operationally in 2019.

Optimistic about future production

The good news is that Verso Corporation's Duluth paper mill was sold to ST Paper 1, LLC, in May 2021 for toilet paper production. We anticipate that when the mill is up and running - maybe late 2022 - the influent will increase once again, as will the supply of biosolids. Farmers, thank you for your patience as we try to rebalance our biosolids production. We appreciate your partnership and look forward to seeing you soon!

Editor's Corner: The Biosolids Digest is back in production after taking a brief hiatus during the pandemic. If you know someone who would like to be on our mailing list, or if you wish to be removed, send an email to Dori.Decker@wlssd.com or call 218-740-4808. We'd also like to hear from you for story ideas, including farmers to feature in the digest. Let's connect!

WLSSD's Paul Wilken, Enriching Soil and Relationships

By Sarah Lerohl, with contributions by Dori Decker

Lead Worker Paul Wilken likely needs no introduction to the farmers he sees while on the job. Over the past 10 years, Paul has been building relationships with the farmers enrolled in our biosolids land application program. WLSSD staff land apply to many of the same farms for years, allowing them to form unique relationships with customers over time.

This spring, Paul and the crew were applying biosolids in Lakeview Township on some hay fields near Cromwell. These fields and their farmer have special meaning for Paul. Paul took the farmer's call on his very first day as our program lead back in October 2010. It's been a gratifying relationship that's grown over the last decade or so. Steve is a small-scale, but serious farmer heavily invested in regenerative land practices. He balances the nutrients in his fields each season—whether biosolids are applied or not, and takes a keen interest in soil health. Steve retired from his former day job and now focuses on his farm. He's a big proponent of biosolids, and Paul enjoys being a small part of Steve's success.

WLSSD's Field Green® biosolids offer farmers a nutrient source at a lower price than commercial fertilizers, with benefits that commercial products can't offer, including increased organic matter. Biosolids application improves the soil matrix, allowing the plants to uptake important micronutrients and set strong, deep roots. Our goal is to help farmers be more efficient and productive, and these fields really attest to that.

It's not all business out there in the field, though, and that's a part of the job that Paul reflects on: our people and our products make a difference in people's lives.

There are many years of shared history with our farmers and a lot of opportunities for learning, on both sides. Our land application team also comes to know the farmers and their families as an important piece to the scheduling puzzle: health challenges, property transactions, inheritances, family budgets, and even politics, play a role.

And so while it is the business of biosolids that brings Paul and crew to the farm fields, it is also where the roots of friendship take hold.

More about Paul: Paul started out his career in wastewater treatment in his hometown of International Falls at Boise White Paper, LLC. When he was inspired to move "south", he was a shoo-in for Plant Operator in our WLSSD facility in 2005. Paul eventually made his way to Lead Worker for the land application department in 2010. Paul is a wealth of knowledge on all aspects of operations at WLSSD.

Paul feels strongly about providing an affordable, high quality fertilizer. "We can help a small, family farm make their margins a little thicker."

When Paul isn't ankle-deep in biosolids, he is hitting the pavement (or trail) on a bike, or on his own two feet. He averages 25 miles/week of running mileage! Paul's favorite running experience was Pike's Peak Marathon; Imagine starting at 6,500 ft of elevation (I am already gasping for air), and running to the peak at 14,115 feet!

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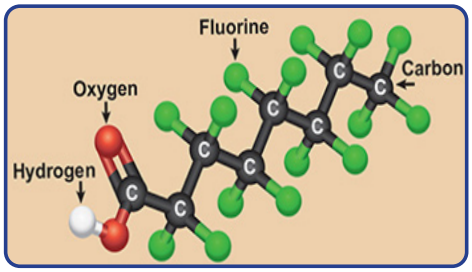

PFOA Molecule, one type of PFAS (credit: NIEHS)

What's All the Fuss About PFAS?

PFAS is the acronym for "Per and Polyfluoroalkyl Substances". It is commonly pronounced like floss, "P-Foss", though it is sometimes pronounced "P-Fass". This is a large family of man-made chemicals that continues to receive attention from the scientific community.

There are more than 4,700 PFAS chemicals. The backbone of all PFAS molecules is the carbon (C) and fluorine (F) chain. The C–F bond is very strong, making it difficult to break these molecules apart. PFAS are known as the "forever chemicals" because they are so difficult to break down and because these chemicals persist for a long time wherever they are found. PFAS can be found in the products that contain them, the human body, and the environment.

Manufacturers use PFAS for creating "slippery" surfaces and products that resist heat, fire or grease. This is why they have been useful in items like non-stick cookware, fire-fighting foam, stain and water repellants, and food packaging.

Still wondering what the fuss is about, right? Here it is…Some studies have shown that human exposure to PFAS might have adverse health effects on metabolism, immune response, fertility and pregnancy, and cognitive development, among other findings (National Institute of Environmental Health Sciences).

In 2006, the U.S. EPA signed an agreement with manufacturers to eliminate the use of PFOS and PFOA—two long-chain PFAS that have been shown to be problematic. Many other PFAS are still in use and making their way into the human body and the environment. The primary sources of human exposure are food, and food packaging, furniture, carpeting, clothing, and drinking water.

Locally, PFAS contamination has been associated with fire-fighting foam used at various locations, including training facilities. Landfill leachate (water collected under landfills) can also contain high levels because our communities have buried products containing PFAS there for decades. PFAS have even been found in Lake Superior smelt, resulting in a consumption advisory this spring.

WLSSD staff continues to monitor ongoing research on PFAS. Although scientists have not yet found answers to many questions about PFAS, WLSSD is actively working to identify sources of PFAS in our community. We hope that identifying PFAS sources can help reduce the amount of PFAS used in our area. By preventing PFAS use, we can limit the need to figure out how to remove PFAS from our wastes.

WLSSD is committed to being on the forefront of environmental and public health; we will provide more information as it evolves.

Graphics credit to Wisconsin Department of Natural Resources

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Clear Answers for Clean Water℠

Contact us

Have a question or want information on Field Green® biosolids? Here is a guide to our staff members:

If you are an existing customer and would like to schedule a field or have questions on a recent application, contact:

Paul Wilken, Lead Land Application Operator
(218) 740-4764 or paul.wilken@wlssd.com

If you're interested in enrolling a field in the biosolids program, have general questions, are a member of the public, or are a government official, contact:

Dori Decker, Environmental Programs Coordinator
(218) 740-4808 or dori.decker@wlssd.com

For general questions, contact:

Todd MacMillan, Biosolids Supervisor
(218) 740-4767 or todd.macmillan@wlssd.com

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Hi, I am Dori.

My name is Dori Decker. I am the new Environmental Programs Coordinator working with the biosolids program at WLSSD.

I count myself lucky to have grown up on 40 beautiful acres near Duluth that inspired a curiousity of the natural world. I pursued a couple degrees from UMD that I thought might quench this thirst: B.S. Biology and B.A.S. Teaching Life Science.

I have long been compelled by the idea of protecting our natural resources, and I have pulled environmental education and advocacy into my career journey whenever possible, to include teaching high school biology in Tanzania, teaching science at an environmental education charter school, and more recently at UMD, connecting wellbeing and environmental health through campus programs and projects.

After working in the university environment for nearly 20 years, I am "coming back home" so to speak, living and working closer to the land and water that keeps me grounded in the northland. I am grateful to be part of the WLSSD team!

When I am not working, you'll find me in the garden, chillin' with the chickens, near the campfire, or of course, on the water!

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