

**Beyond  
the  
Flush:  
A  
Tribute  
to Poo**

***A Toilet Tank Book***





# BEYOND THE FLUSH: A DEDICATED TRIBUTE TO POO

## *A Toilet Tank Book*

*A collection of Fun Fecal Facts and Friday  
Flush nuggets of wisdom*



2023 © Water Environment Federation

# BEYOND THE FLUSH

**2022 Year of Poo** set out to lift the lid on the power beyond the flush and put poo on the throne it so rightly deserves.

This is a dedicated tribute to poo featuring Fun Fecal Facts & floatable nuggets of wisdom from our Friday Flush squad. Talking straight about the crap we all create. Poo is an unspoken hero that has been here since day one without proper representation or recognition.

Frequently misunderstood, conveniently flushed and forgotten, and vastly underestimated – Poo has incredible power beyond the flush.

Brace yourself and step right in it to learn how everyday conveniences and choices can affect your poo-print. While it may just be a poo to you, the poo story starts with you.

***Dedicated to all the proud poo-ducers who own  
their role and flush forward!***



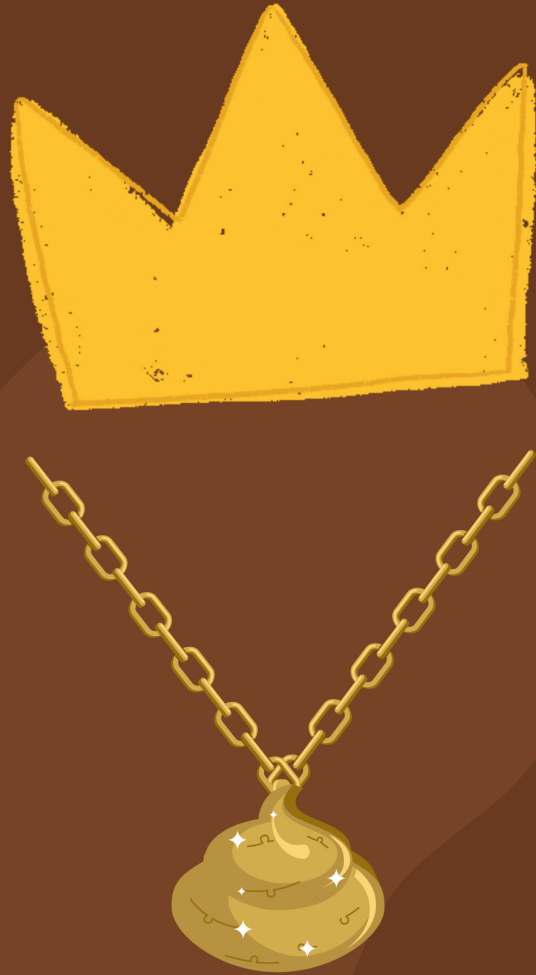
# FRIDAY FLUSH

## Floatable nugget #1

*"2022 Year of Poo is really about personal empowerment, understanding that there is power beyond the flush, that we as producers all have that power to not only know what is happening but to know that we are part of a product stewardship line...that we need to pay attention to the quality of what we're sending down the pipe and to really own that. When the product comes out we have the responsibility to use that in a way that creates massive change, positive change in terms of climate mitigation, energy recovery, all these things that you can do just by flushing."*

- Maile Lono-Batura, Director of Sustainable Biosolids Programs  
Water Environment Federation

# FUN FECAL FACT



## GOLDEN POO

*Kin no undo* or "golden poo" is a symbol of good luck in Japanese culture.



@wikimediacommons



**pooandu**

Step right in to our Fun Fecal Facts - a feature of 2022 Year of Poo. Did you know a golden poo is a symbol of good luck? Click the link in our bio to learn more.

[2022yearofpoo.org](https://2022yearofpoo.org)

#funfecalfacts

#2022yearofpoo

#lpootoo



**pooandu**

Sewage can serve as a public health hero well beyond pandemic, tracking a wealth of information on health concerns. In fact, sewage first gained disease-fighting fame during the global polio eradication efforts. A round of applause for poo! #funfecalfacts #2022yearofpoo #wvsurveillance #ipootoo

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# FUN FECAL FACT

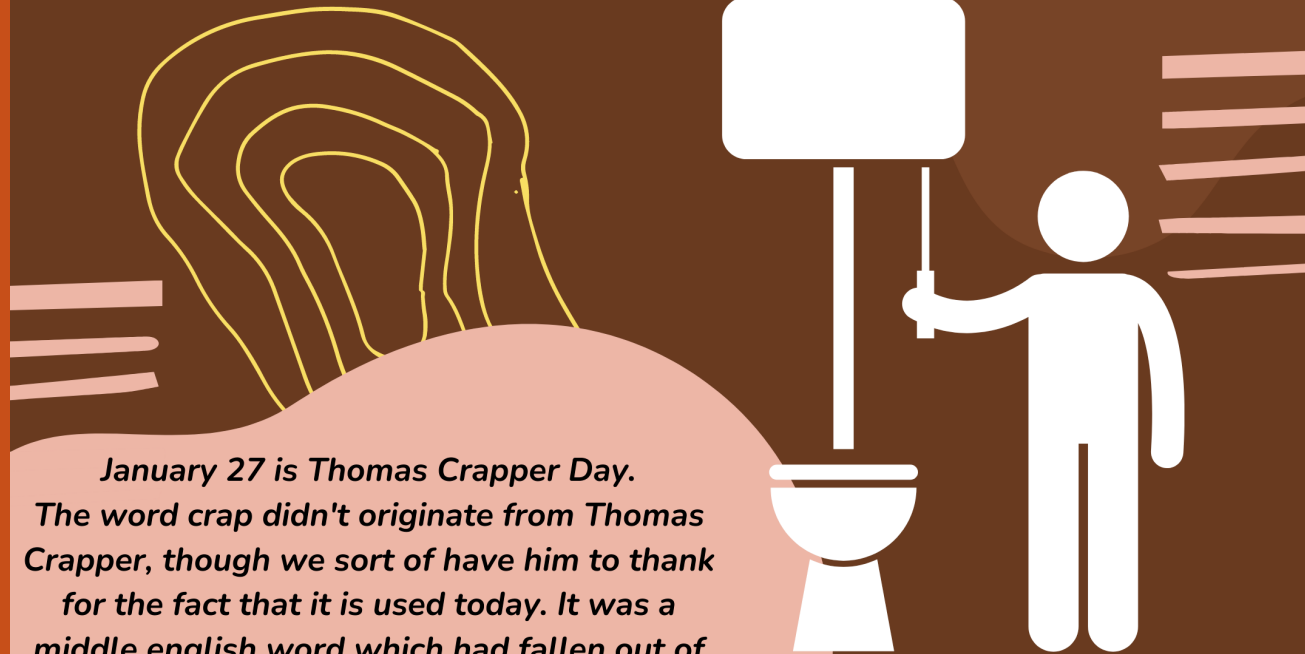
## SUPER POO

*Did you know that poo has played a starring role during the COVID pandemic? Wastewater-based epidemiology has become an early alert system for viruses. If you have COVID-19, "wastewater surveillance" can detect it. SARS-CoV-2 RNA can be counted in post-flush samples to see if cases are increasing or decreasing in communities.*

### **Superpower**

*Poo doesn't just detect it doesn't lie!*

# FUN FECAL FACT



*January 27 is Thomas Crapper Day. The word crap didn't originate from Thomas Crapper, though we sort of have him to thank for the fact that it is used today. It was a middle english word which had fallen out of use by the 1800's so no one in his own era really gave a second thought to it. But in America we never lost it, so when soldiers in WWI were stationed in Britain and saw Crapper on the toilets they thought it was hilarious and re-popularized the word.*

*Courtesy of London Loo Tours*

**HAPPY  
CRAPPER  
DAY!**



**pooandu**

Happy Crapper Day to one and all. Jan. 27 marks Thomas Crapper Day. The day marks his death as his exact date of birth is unknown. So when you flush today, remember the brain behind the bowl.  
#2022yearofpoo  
#funfecalfacts  
#thomascrapper  
#lpootoo



## pooandu

Ever ponder why #2 is coined #2? Me too! Here are some schools of thought. Got any #2 theories of your own? [2022yearofpoo.org](http://2022yearofpoo.org)  
#2022yearofpoo  
#funfecalfacts  
#lpootoo  
#whodoes2workfor  
#everybodypoops

# FUN FECAL FACT

## WHY #2?

*How could we not recognize this momentous occasion - 2/2/22?!*

Schools of thought differ on why #2 was coined for poo.

Some front-runners:

- 1) Two rhymes with poo
  - 2) School code to go to the bathroom
  - 3) A flush selection on certain toilets
- #1 pee and #2 poo

# 2

**WHAT DO YOU THINK?  
SHARE YOUR #2 THEORY**

Thanks to the 'keepers of the crystal bowl'  
Flush LLC and London Loo Tours

# FUN FECAL FACT

## FATBERG AHEAD

London is host to the Royal Family, Thames River, London Loo Tours, and a creature of gigantic proportions beneath the city - a 130-ton fatberg slopped together from grease and wipes.

Encountered in 2017 and estimated to possibly be the largest on record. A crew harnessing fatberg blasters, had to work around the clock to de-chunk it bit by bit.

**WHAT  
SECRET  
WEAPON  
WOULD YOU  
WIELD TO  
BLAST THE  
FATBERG?**



**pooandu**

Thar's a fatberg...to the lifeboats! Put down that wipe - it is feeding a giant that lives beneath our feet. Tune into our Friday Flush on 2/4 featuring @londonlootours at 2022yearofpoo.org #2022yearofpoo #funfecalfacts #lpootoo #everybodypoops #fatberg #londonlootours



# FRIDAY FLUSH

## Floatable nugget #2

*“How much poo, and by extension toilets, connect to absolutely everything: history, anthropology, architecture, art, comedy... it's one of the most fundamental things that humans share.*

*If poo could talk it would say, I know all of your secrets. Because poo has literally been through us, it's transformed from one thing into another thing and then we expel it. That could be a good thing knowing secrets. It can tell us about our health and about our bodies. It could also be bad thing if those secrets get shared in places or in ways that we don't want them to be. Poo ended in an inappropriate place or spreading disease as it has often has done through history. Poo is all knowing.”*

- Rachel Cole-Wilkin, Creator  
London Loo Tours



**pooandu**

Legend tells of The Big Flush. Have you heard it? Let us spin a pass your way with this Fun Fecal Fact post-bowl.

AND turns out, National Poop Day is the day after the Super Bowl - so hearts and flushes to all of our pooandu crew.

[2022yearofpoo.org](http://2022yearofpoo.org)

#2022yearofpoo

#funfecalfacts

#bigflush

#lpootoo

#everybodypoops

# FUN FECAL FACT

## THE BIG FLUSH

Does the Super Bowl actually cause pipes to burst from one massive collective flush? Turns out our sanitation supers have the pulse on this legend.

- *Water use has been shown to spike during Super Bowl breaks.*
- *Salt Lake City pipes did burst in 1984, however, it was due to their age not the actual volume causing it to burst.*

So the real touchdown is we have modern sanitation to thank for taking all of our passes through the loo!

**HAPPY  
NATIONAL  
POOP DAY!**





## pooandu

Turns out toilet paper wasn't the only thing flying off the shelves in 2021. The demand for this Wisconsin-based product outpaced its supply. Telling us that recycled nutrients are not just planet friendly, they're a hot commodity.

@milorganite\_fertilizer  
#2022yearofpoo  
#funfecalfacts#lpooto  
o #everybodypoops

# FUN FECAL FACT

## THE ORIGINAL

Launched in 1926, *Milorganite*® has been on the scene as one of the oldest recycling efforts in the country. No spring chicken, Milwaukee Metropolitan Sewerage District has sold 4.9 million tons of their custom product found in stores across the country.



# FRIDAY FLUSH

## Floatable nugget #4

*“Be proud of what you do. This is literally the greatest recycling story in the United States and we don’t talk about it.*

*Poo would tell us, use me to feed the world, fix the soils, put carbon and the recycled nutrients back in the soil so we can feed the masses and mitigate climate change. We must get this stuff on the land, we must recycle our nutrients and carbon.”*

- Ron Alexander, Founder  
R. Alexander Associates, Inc.

## Floatable nugget #5

*“My grandpa used to say, you have to feed the earth like you feed people, and I thought the whole world did the same.*

*Each and every one of you is a super pooper. Your body produces an extremely valuable metabolic output – People’s Own Organic Power (POOP). The planet needs it, the soil needs it, the circular agriculture needs it, the economy needs it, even the energy industry needs it. So, my dear humans, love thy sh\*t.”*

- Lina Zeldovich, Author & Journalist  
The Other Dark Matter

# FUN FECAL FACT

## SHIMOGOE

In pre-industrial Japan, people called their poo *shimogoe*, which literally meant fertilizer from the bottom of a person. *Shimogoe* collectors gathered the precious substance from cities and shipped it by boats to the countryside. Farmers sometimes argued who got to collect the valuable fertilizer and where--*shimogoe* from the more affluent parts of town went for premium price because people with more nutritious diets released more nutrients in their poo.



**pooandu**

During the Tokugawa period in Japan, one of the most valuable commodities was human waste - shimogoe. Lina Zeldovich

@superpooperpower wrote an entire book about the value of poo. Hear her Friday Flush here:

<https://youtu.be/DYyFas1KH8I> and on [2022yearofpoo.org](http://2022yearofpoo.org)  
#2022yearofpoo  
#funfecalfacts  
#theotherdarkmatter  
#lpootoo  
#everybodypoops





**pooandu**

Your body is a poo making factory that relies on food and nutrients for an offering to the lords of the flush.

Returning those nutrients back to grow food - closes the nutrient loop. Don't take our word for it though - hear it straight from a

USDA Urban Agriculture pro and Univ. of WA researcher, Dr. Sally Brown on today's Friday Flush at

[2022yearofpoo.org](http://2022yearofpoo.org).

#2022yearofpoo

#funfecalfacts#fridayflush

#ipootoo

#everybodypoops

# FUN FECAL FACT



## FOOD LOOP

Who here likes to eat? The mere thought of your favorite dish can induce mouthwatering cray cray cravings - am I right? Just as food goes in, giving your body nutrients to function (or malfunction depending on the dish); it too goes out.

With those nutrients still intact, ready to close the nutrient loop and grow more food. So, next time you're chowing down on some satiable yumminess, remember that you are just one stop on the food loop rollercoaster.



# FRIDAY FLUSH

## **Floatable nugget #6**

*"This is some good sh\*t. When you take away all the stigmatism and you take away the fear and you just look at what that poo can do for a soil...it's amazing.*

*If you think about us as just as part of the journey, there in the great circle of organics recycling, we take our food, we use a lot of it for energy and the part we don't use comes out as poo and that poo is not done with the planet. It wants to go back and start that cycle all over again."*

- Sally Brown, Professor  
University of Washington

# FRIDAY FLUSH

## **Floatable nugget #7**

***"Started World Toilet Organization because people are so inhibited about talking about going to the toilet. (They) thought it is something rude, but they have to go there 6-8 times a day. I want to improve world toilet culture because there are over 1 billion people who don't have a toilet today."***

**- Jack Sim, Founder  
World Toilet Organization**

## **Floatable nugget #8**

***"Poop is a messenger about what is happening inside our bodies and we can adjust our diet, stress levels and sleep to stay in the Goldi-plops zone. Toilets of the future really needs to be accessible, sustainable, and dignified for all beings regardless of what kind of body they present in."***

**- Shawn Shafner, Founder  
The POOP (People's Own Organic Power) Project**

# FUN FECAL FACT

## A DAY FOR TOILETS

Did you know there is an internationally recognized day for toilets?



On November 19, 2001, World Toilet Day was officially inaugurated by the United Nations. This day also marked the start of the World Toilet Organization (WTO) - created to bring attention to the 3.6 billion people without access to toilets.



**pooandu**

How do you level up toilet talk? You make a day of it - literally. Jack Sim (a.k.a. Mr. Toilet), World Toilet

Organization, has dedicated the last 20+ years to leveling up the loo. Hear his Friday Flush at

[2022yearofpoo.org](http://2022yearofpoo.org)

[@worldtoiletorg](https://twitter.com/worldtoiletorg)

[#2022yearofpoo](https://twitter.com/2022yearofpoo)

[#funfecalfacts](https://twitter.com/funfecalfacts)

[#worldtoiletday](https://twitter.com/worldtoiletday)

[#Ipootoo](https://twitter.com/Ipootoo)

[#everybodypoops](https://twitter.com/everybodypoops)





**pooandu**

Who knew there were origin stories that began with poo? Shawn Shafner, The Poop Project, certainly does along with many more fascinating flush insights. Check out Shawn's Friday Flush at: [2022yearofpoo.org](http://2022yearofpoo.org)  
[@poop\\_project](https://twitter.com/poop_project)  
[#2022yearofpoo](https://twitter.com/2022yearofpoo)  
[#iPoo2](https://twitter.com/iPoo2)  
[#funfecalfacts](https://twitter.com/funfecalfacts)  
[#everybodypoops](https://twitter.com/everybodypoops)

# FUN FECAL FACT



## ORIGIN STORY

Creation myths of old speak of cataclysmic events, notable characters, and poo?

You heard it here people!

The Chukchi people from the Arctic, source Raven's droppings from which life emerged. The Wapangwa of Tanzania tell the story of how ants consumed their own dung to amass the earth mound that we inhabit today. These floatable nuggets and more are woven throughout the new doo-ctrine "Know Your Sh\*t", written by today's Friday Flush feature.



# FRIDAY FLUSH

## **Floatable nugget #9**

*“Something that we think of as being a waste, something that brings up feelings of repulsion for us which is very natural and part of our evolution to keep us safe. How do we make it safe and turn it into a resource? What’s the big picture here?”*

*Recognize how normal (poo) is, respect it, but also really to utilize it as a resource because it is part of the solution in addressing climate change, enhancing our soils, feeding our cities and public health.”*

- Bernadette Drouhard, Water Process Specialist  
Black & Veatch

# FRIDAY FLUSH

## **Floatable nugget #10**

*"There is so much more to toilets, sanitation, and poo and all of it than you think. It's so easy to get locked into the mentality of what you grew up with or that you shouldn't talk about this. I mean I tell my 3 ½ year old that we shouldn't talk about it, but really, we should be talking about it.*

*Be curious, learn more, there's amazing books being written right now about poo, the nutrients, and the resources and the information that's in it. There's a new whole industry that is opening up here and get engaged!"*

- Alex Knezovich, Managing Director of Market Development & Communications  
The Toilet Board Coalition



**pooandu**

Record-setting fertilizer prices in 2021 and 2022 have led farmers to look for alternatives, like treated poo a.k.a. biosolids. A Texas

A&M study recently projected that nitrogen fertilizer costs per acre in 2022 would increase 134% and phosphorus and potassium fertilizer by 93%. Hear how farm hand turned poo engineer, Bernadette Drouhard, found her calling in creating sustainable systems for communities across the U.S. at:

[2022yearofpoo.org](http://2022yearofpoo.org)

[@bernadettedrouhard](https://twitter.com/bernadettedrouhard)

[#2022yearofpoo](https://twitter.com/2022yearofpoo)

[#funfecalfacts](https://twitter.com/funfecalfacts)

[#iPoo2](https://twitter.com/iPoo2)

[#everybodypoops](https://twitter.com/everybodypoops)

# FUN FECAL FACT

## FLUSH TO FERTILIZER

Food is at the root of human patterns – both in consumption and digested contribution. Across much of the U.S., our poo (digested food) is refined into a nutrient-rich product used to fertilize crops, build carbon reserves in soil, retain water for plant growth, and improve soil health. Just as early cultures recognized, our food loop can benefit from the nutrients in our poo being recycled and returned to the soil.

# FUN FECAL FACT



## A SIDE OF PLASTIC

Have you used a credit card lately? Have you eaten one? Research from the University of Newcastle in Australia found that people worldwide ingest a credit card's worth of microplastics weekly or 1/2 a pound annually. That translates to around 40% of our diet consisting of...plastic from our clothing, plastic packaging, make-up to name a few.



**pooandu**

In honor of World Water Week, pay homage to our water resources and wildlife. If you like fish (as either a dish or fellow earth inhabitant alike) choosing products sans microbeads or plastic packaging can curb microplastics buildup found in our amphibious co-habitants as well as our waterways and poo fabulous resources. [2022yearofpoo.org](http://2022yearofpoo.org)  
#2022yearofpoo  
#funfecalfacts  
#iPoo2  
#worldwaterweek

# FRIDAY FLUSH

## **Floatable nugget #11**

***"I love sewers, we do not have cities without sewers, but that doesn't mean our current sewer system can't be better, can't be more efficient, could use less water, could be better at reducing the chemicals that are in biosolids and the same for composting toilets.***

***How can we create toilets that are not only better for the planet, but that people want to use and celebrate using. Sanitation is a central pillar of us healing the earth, healing the waters, and connecting back to nature."***

**- Kelsey McWilliams, Founder & Circular Sanitation Consultant  
Point of Shift**



# FRIDAY FLUSH

## Floatable nugget #12

*“Poo is a gift that keeps on giving. It gives when it arrives at the treatment plant and is being treated, it can give off biogas which can be used to produce methane which can be an equivalent of natural gas and power vehicles, electric engines. So poo starts giving right away. And then once it’s treated it goes out into the world, if it’s composted, it goes on soil and slowly releases it’s nutrients. If it’s directly land applied, it’s more immediate nutrients so it just keeps on giving and it makes the soil healthier which results in cleaner water.”*

- Nora Goldstein, Editor  
BioCycle



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Some data points on treated poo to geek out on and insert into future curious conversations.

Pondering other poo data discoveries? Visit our Po(o)p Survey at [2022yearofpoo.org](http://2022yearofpoo.org) to cast your vote on which state is the top poo-ducer. Thanks to [biosolidsdata.org](http://biosolidsdata.org) for curating these nuggets of wisdom.

#2022yearofpoo

#funfecalfacts

#iPoo2

#everybodypoops

# FUN FECAL FACT



## LET'S GET PERSONAL

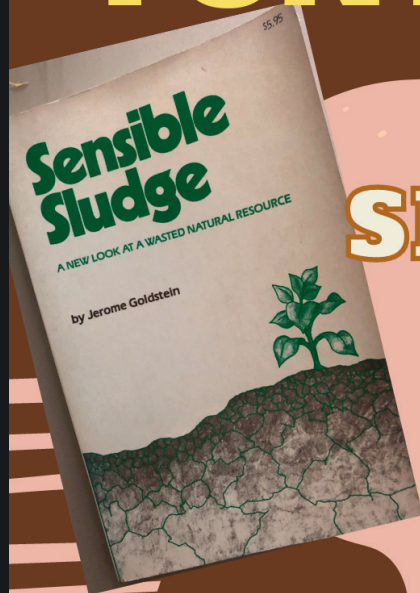
When you flush, computing your daily or annual contribution of the recovered poopie is not likely on your radar. That is unless you are part of an elite audience seeking to lift the lid to understand the the power beyond the flush.

A few facts on annual production to stash in your back pocket:

U.S. total = 5.823 million dry metric tons

You = 37 lbs average per person

# FUN FECAL FACT



## SENSE & SENSIBILITY

"Solution of the waste problem will have to begin on a semantic level...For the so-called 'sludge' is as different from raw sewage as broken eggs are to a home-baked cake."

- John Lear, former editor of the Saturday Review

Featured in *Sensible Sludge*  
by Jerome Goldstein, 1977



**pooandu**

Nearly 50 years ago, poo was called out as a wasted natural resource in the seminal book, *Sensible Sludge*. How have we progressed since then, how have we regressed? Tune in to our latest, Friday Flush with Nora Goldstein, @BioCycleMag, to hear how talking poo was a just part of the family business.

2022yearofpoo.org  
#biocyclemagazine  
#2022yearofpoo  
#funfecalfacts  
#iPoo2

#everybodypoops

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# FRIDAY FLUSH

## Floatable nugget #13

*"1 in 2 people don't have access to safe toilets, it's kind of mind blowing if you think about it. Toilet access issues have been kind of consistent throughout history. 1) Access issues are everywhere, it's not just a thing over there. It's in your backyard no matter you live. 2) Access issues are timeless. We know that there were issues with access to toilets for at least the last 5,000 years. 3) Access issues always reflect disparities and inequities in society. It's the same thing we saw Mycenaean Greece and Rome. 4) We don't always do a good job addressing these issues. Why do we use clean water to flush toilets? Why do some sewers output into waterways?"*

*Poo is a tool that could be used for good or evil. Good being using it for reusable purposes like biogas or compost fertilizer. Or evil such as if we leave it alone and don't manage it well like a tool should be managed then it spreads diseases like cholera and typhoid and makes our waterways disgusting and everything else really a big bummer."*

- Kim Worsham, Founder & Principal  
FLUSH LLC



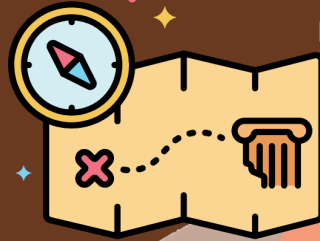
## pooandu

Why do archaeologists LOVE toilets? Often unearthed, these gold mines (or encapsulated time capsules) can unveil ancient diets, health, and diseases. What can toilet history also tell us? Access issues are timeless and almost always repeat the same saga – the haves & have nots. Fast forward to present day – over 2 million Americans do not have safe toilets at home, according to the US Water Alliance.

2022yearofpoo.org  
#2022yearofpoo  
#funfecalfacts #iPoo2  
#everybodypoops

# FUN FECAL FACT

## TALE AS OLD AS TIME



Loos were not among the looted sites in history. Middens were where people would toss their household contributions - from poo to dolls to broken plates. Unbeknownst to people of these ancient times, they were also making an offering of archaeological finds that offered a gold mine of discoveries about civilizations of that time.



# FRIDAY FLUSH

## **Floatable nugget #14**

***"Once you break the silence or taboo about people not wanting to talk about this is that people actually are willing to think about creative ways of managing wastewater more efficiently, creative ways of harvesting the nutrients that are in that wastewater, creative ways of turning the waste to energy. There is a whole community of people out there that are really excited about this work once you open yourself up to talking about it."***

- Chris Clapp, Executive Director  
Ocean Sewage Alliance

# FUN FECAL FACT

## THAT'S GOLD IN THOSE PIPES

Globally, we flush \$10B down the toilet each year. Yep, that's right. The worth of nutrients in our human waste is valued in the billions.

And with 80% of the world's wastewater entering the environment untreated, we miss a huge opportunity to recover these nutrients for our benefit and prevent them from harming the ocean's ecosystem, food and water security, economic stability, climate resilience, and human health.



pooandu

The effects of sewage pollution impacts our daily lives. But the more we talk about it, the more we can do to fix it. The @oceansewagealliance is committed to reducing the threat of sewage and other wastewater pollution in our oceans by creating awareness about existing solutions like treating and recycling our waste before it even gets to the coastal shores. #2022YearofPoo #funfecalfacts#StopSewagePollution #iPoo2 #everybodypoops #letstalkpoo#poo #water #sanitation #flush

# FRIDAY FLUSH

## Floatable nugget #15

*“The waste in wastewater is not really waste at all. Wastewater is comprised of clean water, of nutrients, of organics, of energy, all of these things we can recover and repurpose. We are of the camp of moving away from wastewater treatment to more of a resource recovery approach, shifting us away from a linear approach of using water once and getting rid of it to instead a more circular approach.*

*Taking something like wastewater organics – poo – and turning it into an amazing product which thanks to the human digestive system is an endlessly renewable resource.”*

-Aaron Tartakovsky, Founder  
Epic Cleantec



**pooandu**

Rapid population growth, aging infrastructure, and the impacts of our changing climate are already evident. As our cities grow, we need to rethink how we manage our wastewater resources, showing the world that the “waste” in wastewater isn’t really waste at all.

@Epiccleantec converts building wastewater into high quality soil amendments, purified recycled water, and recovered wastewater heat, helping buildings to reuse up to 95% of their water and divert tens of thousands of pounds of GHG emitting wastewater organics – i.e. poo – from landfill.

#2022YearofPoo

#funfecalfacts #iPoo2

# FUN FECAL FACT

## WE BUILT THIS CITY

70% of the world’s population will be living in cities by 2050. At that rate, we are adding a new New York City *every month* until 2060. What does that mean on the poo scale? We need to start building more circular systems to demonstrate that the “waste” in wastewater isn’t waste at all! The NEMA building in San Francisco has transformed the wastewater organics of the 754-unit building into carbon-rich soil products that helped convert an old car dealership into a flowering, green oasis in the heart of downtown San Francisco.



# FRIDAY FLUSH

## Floatable nugget #16

*“Nature is a looping system. Nature is essentially engineered to get rid of all of our waste and to recycle everything. There is no one way in and one way out. It’s all just a giant circle. You and I go to the bathroom and then that becomes the food for the macro and microorganisms in the soil and as they break down those organic molecules they become plant available, things like nitrate will help your plants grown green and healthy”*

- Shea Dunifon, Education Coordinator  
Pinellas County Utilities, Florida



## pooandu

Irresistible delicacies may not immediately come to mind when you think of soil nutrition and yet that is exactly what microbes fancy when they feast on the nutrients from the 5-star restaurants where poo poo platter is what's for dinner.

#2022yearofpoo  
#funfecalfact #iPoo2  
#letstalkpoo#plantnutrients #soilhealth  
#recoveredresources

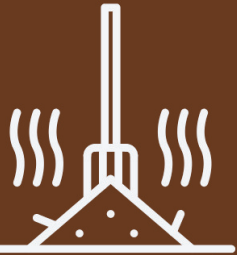
# FUN FECAL FACT

## A MICROBES BUFFET

Poop is full of plant nutrients like nitrogen *butt* in order for those nutrients to be taken up (yum yum) by plants, they must be in plant available forms like nitrate and/or ammonium. Over 90% of the total nitrogen in the soil is not plant available - cue the fecal feast of microbes to make those nutrients available!



# FUN FECAL FACT



## PROLIFIC POOPER

By species, cows are the planet's most prolific pooper, based on the total weight of their output per year.

Humans? We're #2



### pooandu

Taking the lead with nearly 2 billion tons of manure production annually, cows make human poo production appear minuscule in comparison.

#2022yearofpoo

#funfecalfact

#manure

#letstalkpoo #iPoo2

# FRIDAY FLUSH

## Floatable nugget #17

*"We have the power and technology to be way more thoughtful and sustainable and to rethink what has value, what can help us solve many of the problems that we're facing today from global warming to food insecurity to water shortages, health and sanitation challenges.*

*Nature has had this very efficient recycling system for millions of years and that we've only hurt ourselves by removing ourselves from that system. We need to be in better balance with the world inside of us as well as the world all around us."*

- Bryn Nelson, Microbiologist and Science Journalist  
Flush: The Remarkable Science of an Unlikely Treasure



**pooandu**

Take it from the pros at @woodlandparkzoo that turn 1,000 tons of exotic and farm poo alike into a sought after compost resource for the Greater Seattle community. Rhinos, Giraffe, Hippopotamus, Zebras...oh my!

#2022yearofpoo#funfecalfact

#everybodypoops

#zoodoo #letstalkpoo

#animalspootoo

# FUN FECAL FACT

## WINNING RECIPE

In order to turn a pile of wild kingdom poo and bedding into beautiful compost all you need to do is add water and oxygen!

With the right amount of moisture and oxygen, the beneficial aerobic microbes get busy. They heat the piles up to 175 degrees, ensuring that the compost is pathogen-free and safe for use by humans.



# FRIDAY FLUSH

## **Floatable nugget #18**

*“When manure comes out the back end of an animal or a human, we’re animals too, it is chockful of incredible microbes, incredible nutrients things that our digestive systems can’t take up all at once and it is a tremendous waste and loss to our environment to throw that away. It is a much better use of our time, our resources, and our energy to turn that into a compost product or a biosolids or anything where we can get it back into the earth from where it came.*”

*I would encourage you all to think twice about what happens to your poo, to think twice about what happens to your animal’s poo and to really appreciate all that it holds and all that it can become.”*

- Liv Johansson, Dr. Doo  
Woodland Park ZooDoo

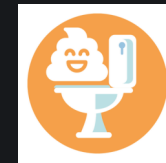
# FUN FECAL FACT



## FLUSH FORWARD



The act of the flush rarely connects our mental synapse to the sheer scale of the journey our flush is about to embark upon. For instance, if you flush in Washington, DC, you are contributing to the 450 tons per day curated by DC Water's Bloom Biosolids program. Think 450 Liberty Bells in weight/day. 56,000 tons were sold in FY2022 alone.



**pooandu**

What may appear as an artfully designed network of systems with large tanks, murky fountains, and conveyor belts is just one stop on the carbon and nutrient loop.

Utilities everywhere work 24/7/365 to make sure that resources recovered from the flush continue to serve their highest purpose - from renewable heat & green electricity to fertilizer.

2022yearofpoo.org  
@bloom.soil @dc.water  
#2022yearofpoo#funfecalfact #water #biosolids #letstalkpoo#everybody poops



# FRIDAY FLUSH

## **Floatable nugget #19**

***"It's our job at the treatment plants to keep the pollutants out of our receiving waters and we discharge out to the Potomac which then goes to the Chesapeake Bay – a resource well worth preserving.***

***We are trying to complete that nutrient and carbon cycle of the planet, that's really the way the Earth is supposed to work. No other animals take their waste and lock it into a landfill right, so we should really do the same thing. We're part of the ecosystem.***

***I prefer the term enriched water (vs. wastewater), that's enriched with carbon which is energy, heat which is also energy and nutrients which we can extract. Those are all valuable assets. This really is a cycle and to interrupt that cycle is really sort of tragic."***

**- Chris Peot, Director of Resource Recovery  
DC Water Bloom**





**pooandu**

And the success of one of the oldest recycling efforts continues to this day, nearly 100 years later. @Milorganite\_fertilizer's claim to fame doesn't stop there – it has also appeared in some notable movies including the classic “Caddyshack”. Star quality was just in the cards.

2022yearofpoo.org

#2022yearofpoo

#funfecalfact

#everybodypoops

#flush

# FUN FECAL FACT

## NAME GAME

In 1925, a contest to name a new organic fertilizer was advertised in National Fertilizer Magazine. The contest ended September 1, 1925 with 233 names submitted. The first prize, a check for \$250, was awarded to McIver and Son of Charleston, South Carolina, for their entry “Milorganite,” derived from MILwaukee ORGanic NITrogen.

# FRIDAY FLUSH

## **Floatable nugget #20**

*"It's not just engineering obviously that's involved in all of the fascinating world of poo. There are all kinds of different professions involved in accomplishing what we do right so, we have machinists, mechanics and electricians and steam fitters and mill rites and we also have the professional side, we have lawyers, we have agronomists, we have laboratory folks, we have marketing staff, we have planners...there's just a huge variety of different white and blue collar roles that are involved in the fascinating world of poo."*

- Rick Niederstadt, Capital Program Support Manager  
Milwaukee Metropolitan Sewerage District/Milorganite

# FUN FECAL FACT

## POO POWER

Water and wastewater utilities make up nearly 2% of global GHG emissions. This includes methane and nitrous oxide from poo-processing. It's due time to turn that poo to power and lead on climate efforts!



**pooandu**

Flush = power! Just like there is nutrient gold in those pipes, so too is a sustainable power source that can be harnessed rather than wasted.

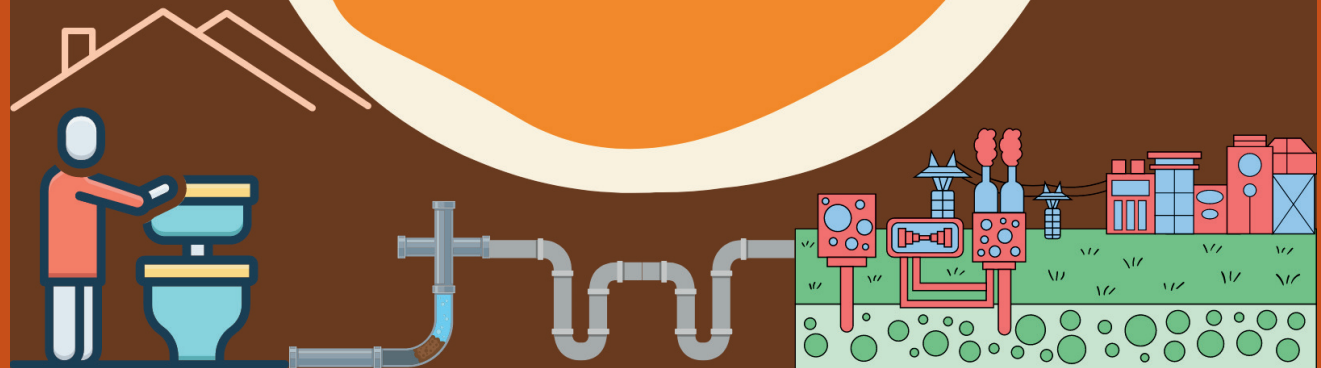
[2022yearofpoo.org](http://2022yearofpoo.org)

[#2022yearofpoo](#)

[#funfecalfacts](#)

[#iPoo2](#) [#poopower](#)

[#circularwatereconom](#)



# FRIDAY FLUSH

## **Floatable nugget #21**

*"Poo is showing up on the global stage in these climate conversations to say, 'hey – we can be part of the solution here. I predict the next few years for poo are going to be huge!"*

*"Poo careerers of the world are not telling our own story enough of how important poo and wastewater is to health to society but even as a resource."*

*"Poo is power – it's got energy, it's got resources, it protects our environment and our health when we manage it correctly and frees people from some of these immense challenges they face when they have adequate sanitation available to them."*

- Austin Alexander, Vice-President of Sustainability and Social Impact  
Xylem

# FUN FECAL FACT

## SCIENCE OF STINK

What's that smell?

Specifically, it is likely hydrogen sulfide ( $H_2S$ ) and ammonia ( $NH_3$ ) - these are the two main gasses that give wastewater a bad smell. Stench compounds don't work alone however, the pH of said funk is what really turns up the dial on odor intensity.

$H_2S$

$NH_3$



**pooandu**

Next time you catch a whiff, you can now casually mention off-hand the culprits behind that odor on a molecular level. Go ahead, flex your fecal facts and the fans will follow – haha!

[2022yearofpoo.org](http://2022yearofpoo.org)

#2022yearofpoo

#funfecalfacts

#iPoo2#letstalkpoo

#pooactivators

#wateraccess

#biosolids #water

#odor



# FRIDAY FLUSH

## **Floatable nugget #22**

***"Don't take advantage of the industry that takes care of us. Get into this field! It's one of the most important fields that exist. One of the baseline, essential fields. Without us civilization as we know it doesn't exist in the same way.***

***We need more cultivators. (A lot of sewage that is produced in the world, a lot of the water gets wasted. Poo gets wasted and is dumped into the rivers and oceans and we don't want that.) Let's cultivate this resource. Make this resource grow into the point where not only is it a resource, it can shown to be 100% the one water cycle."***

**- Cody Diehl, Wastewater Treatment Plant Operator  
Polk County Utilities, Florida & WEFTEC Operations Challenge Bio-Wizards Team**





## pooandu

Elusive, underground for a good portion of existence, and something we all doo – flush. Let's take a moment to tip our hats, applaud, and give thanks to those brave enough to tackle these necessary jobs that make modern society function.

2022yearofpoo.org  
#2023pooandme  
#funfecalfacts #iPoo2  
#letstalkpoo#dirtyjobs  
#biosolids #water  
#everybodypoops

# FUN FECAL FACT

## DIRTY JOBS



Have you ever caught yourself thinking your job stinks or that you're constantly slogging through a murky pool of to-dos? Take back your time spinning this thread as there are people who literally encounter this on their daily. Scroll if you dare...

# FRIDAY FLUSH

## Floatable nugget #23

*"I like to do films about things that we don't talk about because it's very funny. Talking about farts and poop is very funny. We did it as kids and as we become adults we just don't really talk about it too much anymore.*

*The other thing is there is so much interesting stuff going on especially about us recycling our own waste and what we can do with this and it's an environmental issue because there's more and more human beings all the time. When I made the film there were 7.7 billion human beings on the earth, now there's 7.8 and in 10-15 years, there's going to be 10 billion people on the earth. So there's going to be more and more poop around. The fact that we can get all of our human waste out to a certain area allows us to build up major cities."*

- Troy Hale, Documentary Director and Professor of Practice  
Sh\*t Save the World and Michigan State University



Replacing the diffusers in the Prince William County Service Authority's aeration basins is a dirty job, but somebody has to do it! The diffusers help properly oxygenate the tanks so that the microscopic bugs we use to eat nitrogen can thrive.

*Photo Credit: Joseph K/ Prince William County Service Authority*



# FLUSHERS UNITE

Take a sit down to learn how everyday conveniences and choices can affect your poo-print. A perfect gift for:

- Co-workers who are hard to shop for and could use a giggle
- Visitors to environmental education centers
- Friends and family who lead the poo fandom pack

*Ready to step right into it? Pledge and pass along the power of poo.*

## ***Pledge of Poo***

***One Flush***

***Underground***

***Indivisible***

***With Ownership and***

***Bounty for All***