It's even in your BMPs!

Plastic is such a huge part of our modern day society, but when it comes down to it, it is a part that is rapidly spiraling out of control to the detriment of our planet. This problematic polymer is everywhere – it's in your food and water, it's in your clothes, it's in the air, it's part of industrial processes and production, it's in runoff, it's in your BMPs, it's in your good housekeeping measures, it's in your landscaping (artificial turf, irrigation systems, black plastic weed control, etc.) and it's something that has its own special requirements in the IGP. In this month's edition of **The Rain Events**, we will be looking at the problem plastic is creating and what to do about it. Not only for the good of storm water quality, but for the good of the planet and you!

THE PROBLEM: Preproduction plastic, microplastics, nurdles, etc. – plastic pollutants are called by a variety of names and come in many different formats, but the problem we're addressing boils down to *plastic in an erodible form* – fine dust or flakes, resin, pellets, weathered and decomposing plastic materials, microplastics, plastic fragments, etc. In this article we will be mainly talking about preproduction plastics since that is the form which is specifically called out in the Permit. For the sake of easy reading, we're going to simply refer to this pollutant category as plastic.

So why is plastic pollution a problem? Plastic is a very durable material and resistant to decomposition. Combined with its prolific usage, tiny sizes in raw form, and lack of degradation, plastic toxicity can occur for not only wildlife, but also you! The tiny sizes of nurdles or plastic dust, flakes or resins can spread rapidly are difficult to clean up. "Microplastics (MPs) negatively affect the environment and human health owing to their chemical properties, prolonged existence, toxicological effects, and bioaccumulation characteristics. MPs are defined as plastic particles of 100 nm to 5 mm length and include intentionally produced MP beads (primary MPs) or fragments from degraded plastic products (secondary MPs). Owing to the fine particulate nature of MPs, they can be ingested easily by aquatic organisms, which could result in the blockage of the digestive tract and cause fatality. MPs are considered to be more harmful to aquatic environments than other pollutants owing to their bioaccumulation characteristics, which could cause chronic toxicity in aquatic organisms, including amphibians, zooplankton, fish, mammals, and marine birds. Polystyrene (PS) MPs can disrupt reproduction in marine filter feeders, as they can be transferred easily through blood."[1]

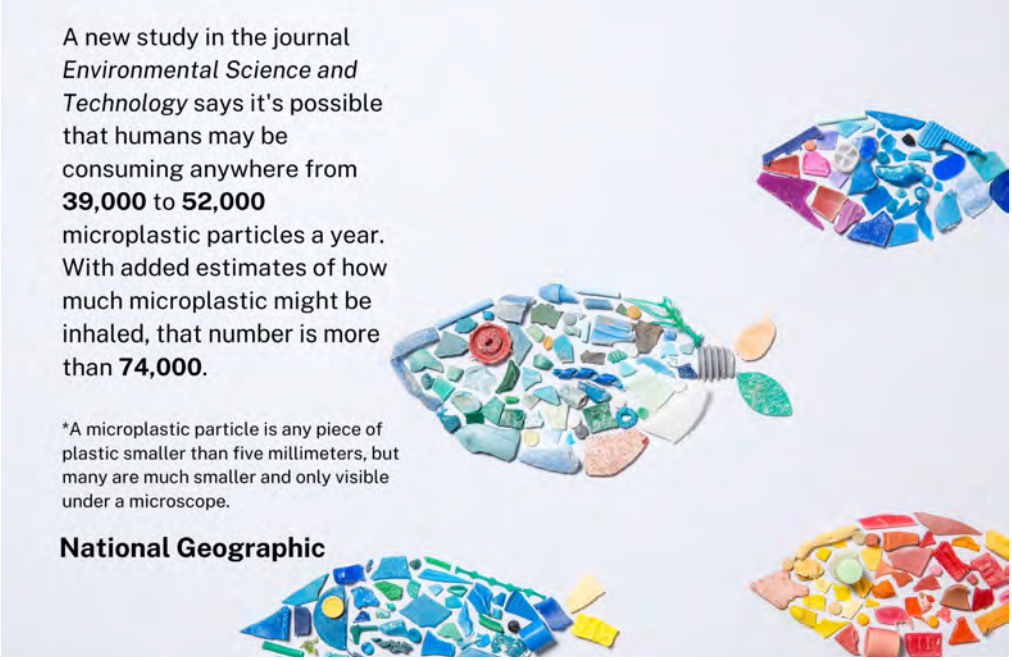
And according to the Water Board's guide to preproduction plastics, "Preproduction plastic, like other plastic debris, may contain compounds such as bisphenol A and nonylphenol that are used in the manufacture of plastic resin and pose potential health and environmental hazards. Plastic in the marine environment is also able to accumulate and concentrate toxic pollutants. Research has found pieces of plastic to contain toxic pollutants at levels that are thousands of times higher than those typically found in seawater."[2] But plastic pollution is not solely from industrial processes. How does plastic get in our drinking water and where does it come from? Plastics in micro forms are abundant and come from many different sources. Some sources are related to industrial activities, but many more sources are from everyday life such as tire wear, artificial turf, irrigation and weed abatement techniques, wear and tear of synthetic clothing, and even toothpaste, skin cleansers, food wrappers, face masks, and beauty products. Regardless of the source of plastic, it can then enter either the storm sewer system (where it discharges straight to the receiving water) or it can enter the sanitary sewer system. The plastic is so small that it passes through the sanitary sewer treatment process practically undetected from where it is released to rivers, the Delta, or the Pacific Ocean. But since this newsletter highlights industrial facilities and storm water compliance, we're going to focus on what the Permit requires of facilities who handle plastics, and what you can do to help with the

problem.

WHAT DOES THE PERMIT REQUIRE OF INDUSTRIAL FACILITIES WHEN IT COMES TO PLASTIC? According to the IGP, "Facilities covered under this General Permit that handle Plastic Materials are required to implement BMPs to eliminate discharges of plastic in storm water in addition to the other requirements of this General Permit that are applicable to all other Industrial Materials and Activities. *Plastic materials are virgin and recycled plastic resin pellets, powders, flakes, powdered additives, regrind, dust, and other similar types of preproduction plastics with the potential to discharge or migrate off-site.*" (XVIII.A) The facility will need to provide a list of the plastic forms they will be handling to the Waterboard as well as comply with the special regulations for plastics facilities. These requirements include: stringent containment systems for discharge locations downstream of areas where plastic may be handled, a suite of BMPs that are as, if not more, effective than a containment system if the system is not feasible for the facility, containing all plastics in durable and sealed containers to prevents leaks or spills, and secondary containment just in case of an incident where plastic could become rogue and get into the drainage systems, and vacuum systems for cleanup efforts.

For facilities who are either exempt from installing a containment system or who find it infeasible to do so, the Permit calls out eight BMPs that should be implemented instead...

1. Plastics Facilities shall annually train employees handling Plastic Materials. Training shall include environmental hazards of plastic discharges, employee responsibility for corrective actions to prevent errant Plastic Materials, and standard procedures for containing, cleaning, and disposing of errant Plastic Materials.
2. Plastics Facilities shall immediately fix any Plastic Materials containers that are punctured or leaking and shall clean up any errant material in a timely manner.
3. Plastics Facilities shall manage outdoor waste disposal of Plastic Materials in a manner that prevents the materials from leaking from waste disposal containers or during waste hauling.
4. Plastics Facilities that operate outdoor conveyance systems for Plastic Materials shall maintain the system in good operating condition. The system shall be sealed or filtered in such a way as to prevent the escape of materials when in operation. When not in operation, all connection points shall be sealed, capped, or filtered so as to not allow material to escape. Employees operating the conveyance system shall be trained how to operate in a manner that prevents the loss of materials such as secondary containment, immediate spill response, and checks to ensure the system is empty during connection changes.
5. Plastics Facilities that maintain outdoor storage of Plastic Materials shall do so in a durable, permanent structure that prevents exposure to weather that could cause the material to migrate or discharge in storm water.
6. Plastics Facilities shall maintain a schedule for regular housekeeping and routine inspection for errant Plastic Materials. The Plastics Facility shall ensure that their employees follow the schedule.
7. PRDs shall include the housekeeping and routine inspection schedule, spill response and prevention procedures, and employee training materials regarding plastic material handling.
8. Plastics Facilities shall correct any deficiencies in the employment of the above BMPs that result in errant Plastic Materials that may discharge or migrate off-site in a timely manner. Any Plastic Materials that are discharged or that migrate off-site constitute an illicit discharge in violation of this General Permit.



WHAT CAN YOU DO TO HELP THE PROBLEM? Does your facility handle plastics in forms that the Permit specifies? Then the best thing you can do to help with the plastic problem is to follow the guidelines provided to the best of your ability. It's basically an SPCC for plastic... *(remember last month's article?)* Take early steps so you don't have to worry about a bunch of cleanup or litigations later. Even if your facility works with plastics in forms which aren't specifically addressed in the Permit (for example—recycling or waste facilities dealing with bulkier plastics), you can still practice good handling practices to help reduce pollution. Can you put any and all plastic processing or handling under cover? If so, you can apply for an NEC. Which would be a definite plus for the your storm water program!

[1]https://www.sciencedirect.com/science/article/abs/pii/S0301479722010830

[2]https://www.waterboards.ca.gov/water_issues/programs/stormwater/plasticdebris.shtml

The Rain Events

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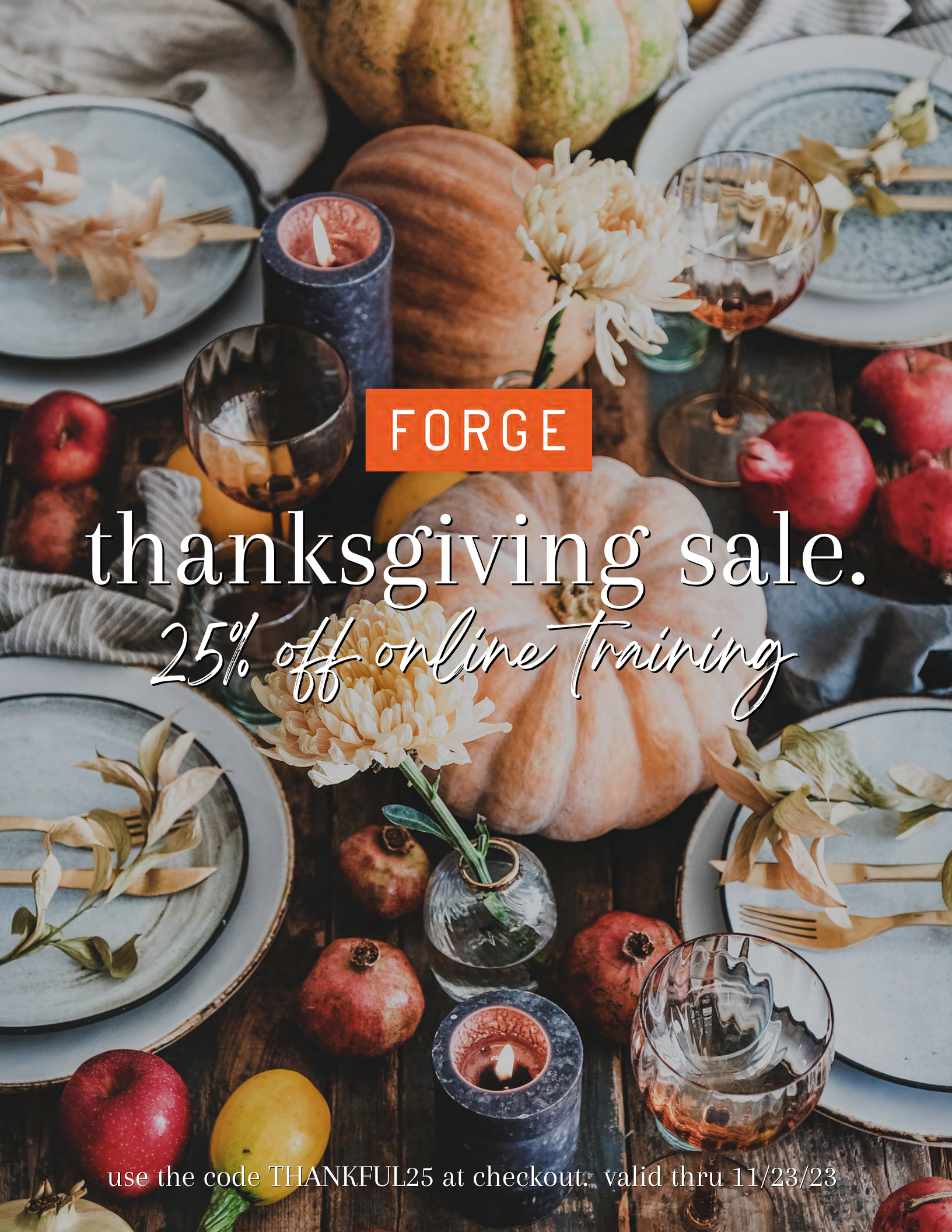
thankful
Give thanks this Thanksgiving with a grateful heart.
Psalm 86:12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Storm Water Contest...

Each month, we invite our readers to participate in a contest to test their knowledge of the Industrial General Permit and show their storm water compliance program. We enter all submittals to our monthly newsletter question into a drawing and one person is selected at random to receive a $25 gift card. Last month's contest question was:

What type of facilities do SPCC Plans apply to?

Congratulations to Alex who replied *"SPCC plans apply to facilites that store, transfer, use any type of oil or oil products, such as gasoline, fuel, hydraulic oil, vegetable or animal oils, sludge, or oil mixed with waste; that have appregate aboveground oil storage capacity greater than 1320 gallons or completely buried storage capacity greater than 42,000 gallons, and have the potential for an oil discharge reaching navigable waters."* Alex, we hope you enjoy some early holiday treats! See's are some of our favorites, and we hope you enjoy them too!

...This Month's Contest

In a nutshell, what are the 8 BMPs in the alternative option?

We need industrial storm water sleuths to help us with this month's question. Submit your answers by Friday, December 8th. Email your answer to jteravskis@wgr-sw.com. One winner will be selected by a random drawing to receive a $25 gift card to EarthHero (a sustainable and earth friendly business with lots of environmentally friendly products).

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