

According to a 2019 report prepared for WWF International¹, people across the world are unknowingly consuming approximately 5 grams of plastic each week. That's like pulling out a credit card from your wallet and making it a weekly snack! It works out to be about 250 grams per year—or half-pound of plastic every year. You are probably thinking—I don't eat credit cards ... so, how am I consuming plastic? Water! According to the same study, 94.4% of municipal drinking water sources in the United States contain an average of 4.5 fibers of plastic per 500 ml. That equates to over 1,000 plastic fibers in an 8-ounce glass of tap water. This month, **The Rain Events** is going to focus on controlling microplastics (sometimes referred to as nurdles). We will explore what the Industrial General Permit (IGP) requires of facilities that handle plastics.

How does plastic get in our drinking water and where does it come from?

Microplastics 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, wear and tear of synthetic clothing, and even toothpaste, skin cleansers, 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.

Health affects of digesting microplastics: An October 7, 2019 Washington Post news story stated, *"Because research into microplastics is so new, there's not yet enough data to say exactly how they're affecting human health, says Jodi Flaws, a professor of comparative biosciences and associate director of the Interdisciplinary Environmental Toxicology Program at the University of Illinois. But **"there cannot be no effect,"** says Pete Myers, founder and chief scientist of the nonprofit Environmental Health Sciences and an adjunct professor of chemistry at Carnegie Mellon University. It's likely that ingesting microplastics could further expose us to*

chemicals found in some plastics that are known to be harmful."

IGP Compliance: Obviously, there is more to preventing and addressing this global problem than what is presented in the State Water Board's Industrial General Permit. However, these alarming facts do underscore the importance of controlling plastic particles at industrial facilities. The latest version of the IGP included specific control measures for industrial facilities that handle plastic particles. Let's review them.



The IGP addresses the following types of sources of plastic materials: virgin and recycled plastic resin pellets, powders, flakes, powdered additives, regrind, dust, and other types of preproduction plastics with the potential to discharge or migrate off-site (i.e. wind dispersion or track out). Any plastics facility covered by the IGP that manufactures, transports, stores, or consumes these materials is required to submit information on SMARTS, including the type and form of plastics, and which BMPs are implemented at the facility to prevent illicit discharges. Under State Water Code Section 13367, these facilities are mandated to implement the following six minimum BMPs:

¹ http://awsassets.panda.org/downloads/plastic_ingestion_press_singles.pdf

1. Containment systems at each storm water discharge location down gradient of areas containing plastic material. The containment system must be able to trap all particles retained by a 1mm mesh screen, with a treatment capacity of no less than the peak flow rate from a one-year, one-hour storm.
2. When a containment system is infeasible, or poses the potential to cause an illicit discharge, the facility may propose a technically feasible alternative BMP or suite of BMPs. The alternative BMPs shall be designed to achieve the same or better performance standard as a 1mm mesh screen with a treatment capacity of the peak flow rate from a one-year, one-hour storm. Alternative BMPs must be submitted to the Regional Water Board for approval.
3. Use durable sealed containers designed not to rupture under typical loading and unloading activities at all points of plastic transfer and storage.
4. Use capture devices as a form of secondary containment (e.g. pans, tarps, berms) during transfers, loading, or unloading plastic materials.
5. Have a vacuum or vacuum-type system for quick cleanup of fugitive plastic material available for employees.
6. Facilities that handle plastic materials smaller than 1mm in size shall develop a containment system designed to trap the smallest plastic material handled at the facility with a treatment capacity of at least the peak flow rate from a one-year, one-hour storm, or develop a feasible alternative BMP or suite of BMPs that are designed to achieve a similar or better performance standard that shall be submitted to the Regional Water Board for approval.

What does 1 mm look like?

▪ ← *Like this!*

Plastic facilities can avoid having to install a containment system (#6 above) if they implement the following eight BMPs:

- 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.
- Immediately fix any plastic materials containers that are punctured or leaking and clean up any errant material in a timely manner.
- Manage outdoor waste disposal of plastic materials in a manner that prevents the materials from leaking from waste disposal containers or during waste hauling.
- If there are outdoor conveyance systems for plastic materials, operate them to 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.
- Outdoor storage of plastic materials must be in durable, permanent structures that prevent exposure to weather that could cause the material to migrate or discharge in storm water.
- Maintain a schedule for regular housekeeping and routine inspection for errant plastic materials.
- Include in the SWPPP (on SMARTS) housekeeping and routine inspection schedule, spill response and prevention procedures, and employee training materials regarding plastic material handling.
- 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.

Plastic pollution is becoming a big deal not just in the California IGP and the United States, but also around the world. Make sure that your industrial facility has good BMPs in place to prevent it from being part of the problem. ☁

"To Do List" for January

- ☁ Perform the January monthly inspection
- ☁ Now that we are halfway through the rainy season, check out your BMPs and see how they are doing. Do any need to be cleaned, replaced, replenished, or re-positioned?
- ☁ Work on obtaining your last two samples for the storm water year.

2020 Training Events

A great New Year's resolution is to get more storm water training. To help you towards that goal, we have resolved to bring you a class each month.

February 20: Storm Water Sampling School

Click [here](#) to register.

March 19: Storm Water Treatment School

April 28—30: QSP/QSD Class. [Register](#)

May 25—31: PDU Week

June 4: BMP Roundup

July 28—30: QSP/QSD Class

August 14: Kayak Tour of the Lower Mokelumne River Watershed

Sept. 21—25: Storm Water Awareness Week

October 27—29: QSP/QSD Class

November 12: BMP Roundup

December 10: Storm Water Sampling School

Need a SWPPP?

Call us for a quote.

Please contact us if you have any questions ...

The Rain Events

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Technical Questions about Environmental Compliance?

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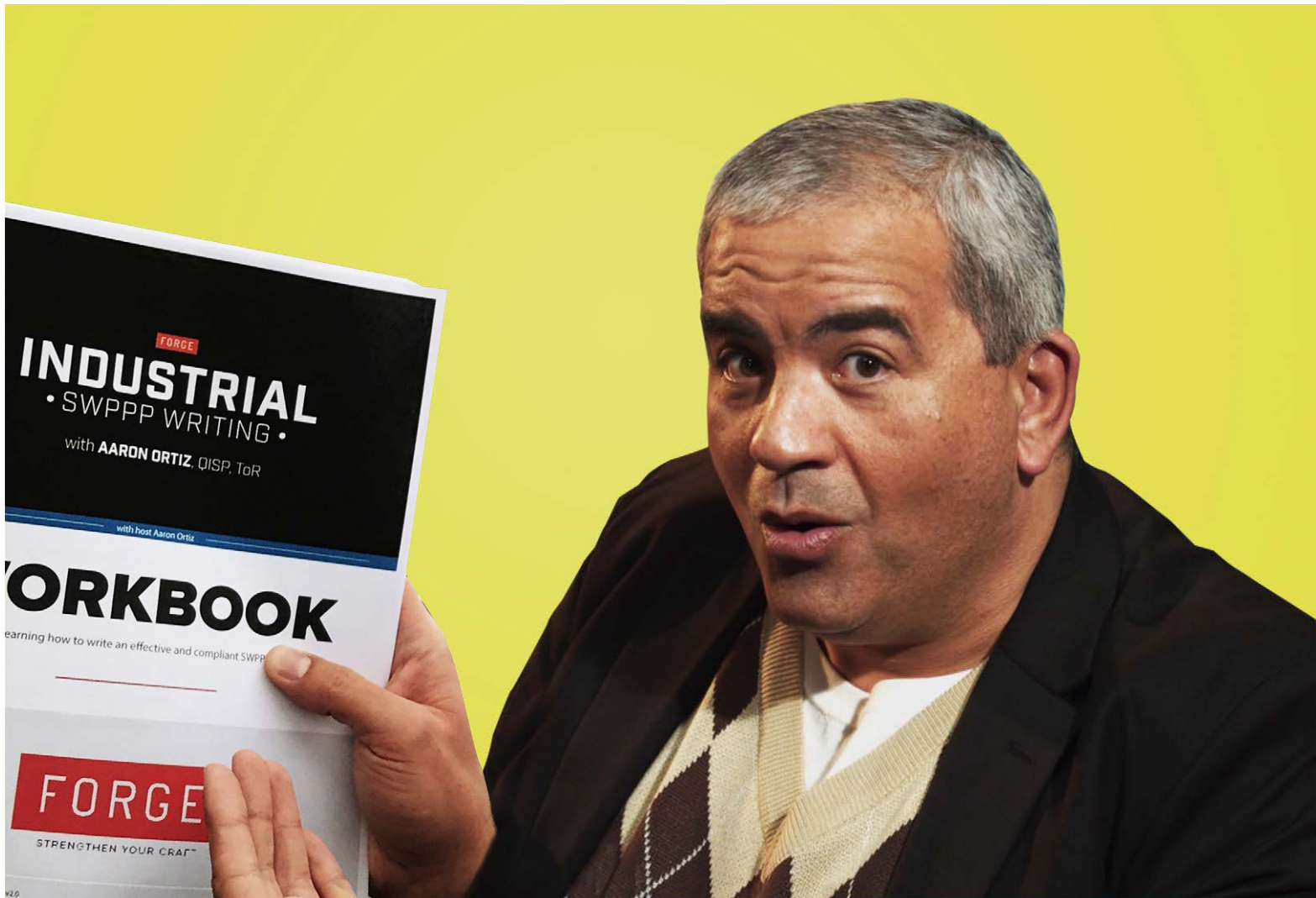
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You mean anyone can write a SWPPP?

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This online course features nine video lessons, a virtual facility inspection, a printable handout with homework assignments, and a copy of our own SWPPP template that we have used on literally hundreds of California industrial facilities.

You get all of this for the very reasonable price of \$99.99 - try comparing that to what you would spend hiring an environmental consultant!

Don't tell anyone, but probably the most valuable part of this course are the tips and tricks that we've learned over years of writing SWPPPs. And we're giving them away to you.

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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 question was:

Where would be a good place to observe for non-storm water discharges?

Congratulations, Thomas Jamison, you're the winning entry! Thomas correctly replied to the question from a municipal perspective. But from an industrial perspective, a good place to look for non-storm water discharges would be anywhere that typical NSWDS might originate—the wash rack, for instance, or sources of water/liquid on the facility. Look for leaks and improper use. Don't forget that authorized NSWDS become unauthorized NSWDS as soon as they come in contact with industrial materials. Thomas wins a \$25 gift card to The Honeybaked Ham Company!

This Month's Contest Question:

WHERE CAN YOU FIND THE SPECIAL PLASTICS REQUIREMENTS IN THE CURRENT INDUSTRIAL GENERAL PERMIT?

We need industrial storm water sleuths to help us with this month's question. Submit your answers by Friday, January 31st. Email your answer to jteravskis@wgr-sw.com. One winner will be selected by a random drawing to receive a \$25 gift card to Chick-fil-A.



NEED SAMPLING IDEAS?

This video recently released from the State Water Board provides guidance on how to obtain representative samples from industrial discharge points that are sometimes complicated.



<https://www.youtube.com/watch?v=sNjcU4iNvTI>