the Rain events

Spilling the tea about pollution prevention

While dumping chests of tea into the Boston Harbor on the night of the December 16, 1773 may have been an iconic event of American History and the rumblings of the American Revolutionary War which led to our country's formation, the continued dumping of things into the water ways of our nation led to the 1969 Cuyahoga River Fire which brought about the 1972 Clean Water Act. History and our environment were forever changed that day, for the better, and today we are part of that historical moment by the storm water regulations we comply with on a daily basis. In this month's edition of **The Rain Events**, we are going to take a look at pollution prevention, so your facility doesn't have a little Boston Tea Party of its own.

Pollutant Sources

As stated at the beginning of the Industrial General Permit, *"Industrial storm water discharges and authorized NSWDs* that contain pollutants that cause or threaten to cause pollution, contamination, or nuisance as defined in section 13050 of the Water Code, are prohibited."* (IGP III.C) But what are these pollutants? Do all storm water discharges contain them? How do I know which pollutant my facility should be on the lookout for?

Each discharger needs to collect and analyze samples for three main parameters that affect each facility regardless of industrial activity – total suspended solids (TSS), oil and grease (O&G), and pH. Additional pollutants are facility specific and will be identified in the pollutant source assessment. *"These additional parameters may be modified (added or removed) in accordance with any updated SWPPP pollutant source assessment."* The facility's SWPPP is required to identify and list all the potential pollutants related to the industrial activities done at the facility and any correlating materials used for those activities.

*Non-storm water discharges

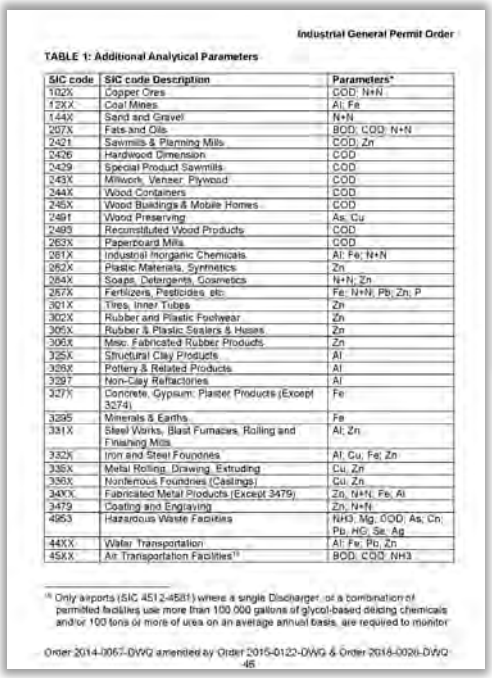

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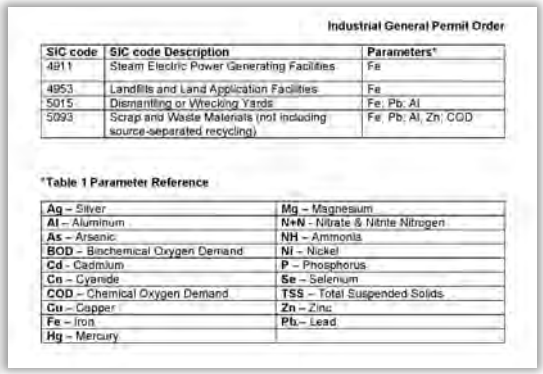
TABLE 1: Additional Analytical Parameters

SIC code	SIC code Description	Parameters*
102X	Copper Ores	COD; N+N
12XX	Coal Mines	Al; Fe
144X	Sand and Gravel	N+N
207X	Fats and Oils	BOD; COD; N+N
2421	Sawmills & Planning Mills	COD; Zn
2426	Hardwood Dimension	COD
2429	Special Product Sawmills	COD
243X	Millwork, Veneer, Plywood	COD
244X	Wood Containers	COD
245X	Wood Buildings & Mobile Homes	COD
2491	Wood Preserving	As; Cu
2493	Recomstituted Wood Products	COD
263X	Paperboard Mills	COD
281X	Industrial Inorganic Chemicals	Al; Fe; N+N
282X	Plastic Materials, Synthetics	Zn
284X	Soaps, Detergents, Cosmetics	N+N; Zn
287X	Fertilizers, Pesticides, etc.	Fe; N+N; Pb; Zn; P
301X	Tires, Inner Tubes	Zn
302X	Rubber and Plastic Footwear	Zn
305X	Rubber & Plastic Seales & Hoses	Zn
306X	Misc. Fabricated Rubber Products	Zn
325X	Structural Clay Products	Al
326X	Pottery & Related Products	Al
3297	Non-Clay Refractories	Al
327X	Concrete, Gypsum, Plaster Products (Except 3274)	Fe
3295	Minerals & Earths	Fe
331X	Steel Works, Blast Furnaces, Rolling and Finishing Mills	Al; Zn
332X	Iron and Steel Foundries	Al; Cu; Fe; Zn
335X	Metal Rolling, Drawing, Extruding	Cu; Zn
336X	Nonferrous Foundries (Castings)	Cu; Zn
34XX	Fabricated Metal Products (Except 3479)	Zn; N+N; Fe; Al
3479	Coating and Engraving	Zn; N+N
4953	Hazardous Waste Facilities	NH3; Mg; COD; As; Cn; Pb; HG; Se; Ag
44XX	Water Transportation	Al; Fe; Pb; Zn
45XX	Air Transportation Facilities[1]	BOD; COD; NH3

[1] Only airports (SIC 4512-4581) where a single discharger, or a combination of permitted facilities use more than 100,000 gallons of glycol-based deicing chemicals and/or 100 tons or more of urea on an average annual basis, are required to monitor

Order 2014-0057-DWQ amended by Order 2015-0122-DWQ & Order 2018-0028-DWQ
46

This pollutant source assessment will be a strong foundation for understanding and knowing what pollutants your facility may be generating that you will need to monitor for. To help with pollutant identification, the IGP lists out in Table 1, industrial activities by SIC code and gives a list of pollutants of concern for each specific activity.



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SIC code	SIC code Description	Parameters*
4911	Steam Electric Power Generating Facilities	Fe
4953	Landfills and Land Application Facilities	Fe
5015	Dismantling or Wrecking Yards	Fe; Pb; Al
5093	Scrap and Waste Materials (not including source-separated recycling)	Fe; Pb; Al; Zn; COD

*Table 1 Parameter Reference

Ag – Silver	**Mg** – Magnesium
Al – Aluminum	**N+N** - Nitrate & Nitrite Nitrogen
As – Arsenic	**NH** – Ammonia
BOD – Biochemical Oxygen Demand	**Ni** – Nickel
Cd - Cadmium	**P** – Phosphorus
Cn – Cyanide	**Se** – Selenium
COD – Chemical Oxygen Demand	**TSS** – Total Suspended Solids
Cu – Copper	**Zn** – Zinc
Fe – Iron	**Pb** – Lead
Hg – Mercury	

Best Management Practices

One of the most effective and best ways you can keep pollution from discharging from your facility is best management practices – BMPs! Drain inserts, filtration devices, straw wattle, compost socks, vegetated swales, retention ponds, and good housekeeping are just a few very effective BMP options a facility can put into place to prevent pollution. We can't stress it enough, and the Permit specifically calls for a suite of minimum BMPs for each facility – but BMPs are your friend! Especially good housekeeping, which will keep your facility from having trackout issues, accumulated sediment buildup, un-maintained equipment, blown on pollution from surrounding facilities, and more.

Spill Prevention

Spill prevention starts with being prepared and having plans and measures in place to prevent or quickly remediate a spill. Keeping pollutant sources on pallets, under cover, sealed and labeled, or indoors goes a long way in preventing spills. Secondary containment also greatly reduces the chances of a spill reaching a drain inlet or the permitter of your facility before being captured. Secondary containment includes things like double-walled tanks, concrete or earth berms, curbing, dikes, temporary berms, drip pans, or sorbents. Secondary containment should be able to effectively capture and retain all of the contents of the largest tank in the case of a spill or capture any spilled oil from transferring activities. The goal of secondary containment is to keep a discharge from leaving the designated area.

To enhance your facility's spill prevention, some preemptive action is best -

Spill Kits: be sure you have an adequately stocked spill kit readily accessible on site. Spill kits should include things like PPE, spill pads, absorbent socks, sorbent materials, drain inlet protection, disposable bags and ties, a caution sign or cones (to keep the cleanup crew safe), and maybe even a copy of spill procedures. Evaluate your facility and determine what type of spills you may have to cleanup and adequately stock the amount of spill equipment and cleanup supplies you would need in the case of an emergency.

Labeling: Label everything. That way you know what spilled, and what materials to use to clean it up. Label your spill kit storage location so that anyone can find the spill equipment and cleanup materials. Label where procedures can be found. Label hazardous waste. Make sure that everything is labeled, so even if you don't know what to use or where cleanup materials are, you can find them quickly without having to rummage through a bunch of things. It's also a great idea to label storm water drain inlets so you know what drains to protect.

Maintenance: fix the problem before it happens. Doing regular maintenance, inspections, and repairs will go a long way in keeping spills from occurring. Follow the appropriate industry inspection and maintenance standards for oil tanks and pipelines, and etc. (check out CASQA cutsheet SC-11 for some guidelines) Check 55-gallon drums to make sure they're in good condition. Make sure containers are stored correctly and aren't going to be knocked over or damaged by moving equipment and are in good working condition.

Training: As they say, knowledge is power. Train employees, contractors, and workers on how to properly and correctly respond to and cleanup spills. Employees should be familiar with the SPCC plan, procedures, spill equipment and cleanup supplies, spill reporting protocol, as well as educated about aboveground storage tank requirements. In the case of a spill, your team should also be able to easily identify where the nearest drain inlet will discharge so they can knowledgably report and contain the spill. It's also a great idea to train employees on how to respond to illegal dumping incidents.

But sometimes the inevitable happens and when a spill does occur, it should be taken care of immediately. Using the spill kit and cleanup supplies, as quickly and safely as possible, clean up the spill by using absorbents, vacuums, and dry sweeping. The goal is to keep the spill, contaminated material, and residual pollutants from reaching the storm drain or leaving the site.

Sampling for Pollutants

Once discharge starts at your facility, the Permit allows a 4-hour window for collecting samples. If the discharge started during non-business hours, the Permit makes allowance for this by allowing facilities to collect samples when business hours begin for the day, provided that 12 hours have not elapsed since the discharge began. Don't forget, permittees are now required to collect storm water samples regardless of the time of year. Resist the urge to collect samples as soon as the discharge begins, because the resulting sample will probably not be representative of your facility's overall discharge.

A ***"representative sample"*** is one that reflects the average quality of the storm water leaving your facility. The Golden Rule of Sampling is applied when we collect a sample that is "not cleaner than average and not dirtier than average". Sometimes there are individuals who look for the absolute cleanest part of the discharge to sample even if it only represents 1% of the total amount that leaves the property. However, there are also individuals who believe that the most environmentally responsible thing to do is to sample the dirtiest water they can find. Neither of these scenarios reflect the Golden Rule of Sampling. There are times when there is really no choice in the matter, such as getting a sample from a discharge pipe. Open bottle, fill bottle, close bottle ... you don't have to think about where to get the sample. But there are other times, such as with sheet flow and drain inlets, where a decision is needed on where exactly to collect the sample.

Oil & Grease Sampling – the O & G sample bottle must be filled directly from the water flow. So, typically look for places were the water is deep enough (usually a depressed location that is receiving flow—avoid puddles) or where it is flowing into a storm water catch basin. You may need to construct a location to facilitate collection. Don't use intermediate containers to collect O&G samples – the oil will stick to the sides of the intermediate container which can cause the analytical results to be inaccurate.

Sampling Around BMPs – Sampling before BMPs will not collect a representative sample and show the effectiveness of the BMP installed. However, moving the BMP to properly collect the required sample will disturb the pollutants and sediment that have been trapped within the BMP and re-expose them to the storm water discharge.

Don't muddy the waters - When collecting a sample, never use the bottle or other device to "scoop up" storm water or scrape the surface. It's best to avoid stirring up sediment and other pollutants that aren't representative of your discharge. It could cause a false result for TSS.

Analyze pH in flowing water – if at all possible, try to measure pH in flowing water. This tends to get the most accurate and representative results.

It's time to wage a pollution revolution at your facility. In doing so, you're setting the stage for future generations of Americans to enjoy!

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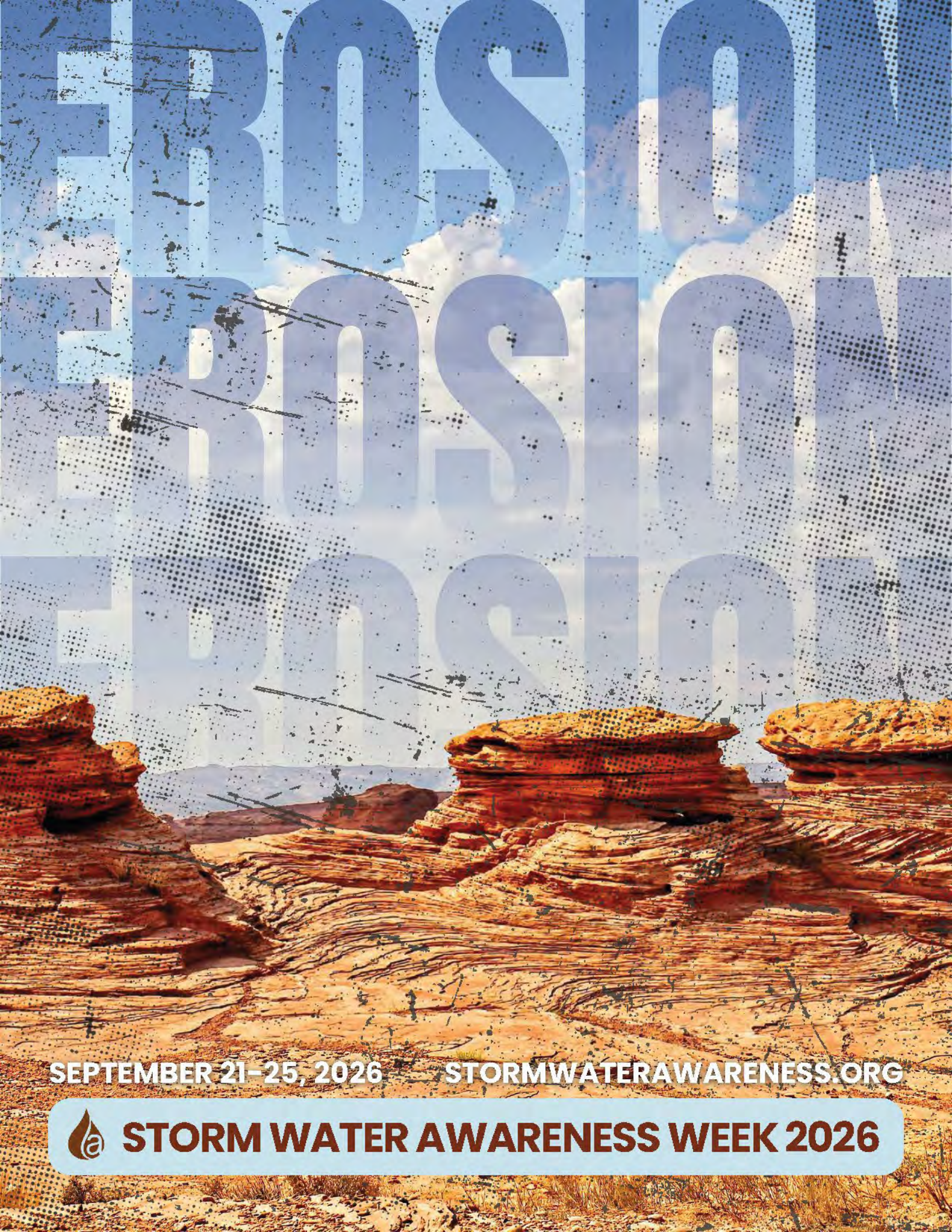
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Storm Water Contest...

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.

If you can make this treatment option work, which is the best option in the opinion of The Rain Events newsletter?

Congratulations to Sean who answered, *"The best option is a retention pond, if you can make it work."* We hope you enjoy some delicious ice cream from Salt & Straw!

...This Month's Contest

What is the most powerful tool you can utilize in your pollution revolution at your facility?

We need industrial storm water sleuths to help us with this month's question. Submit your answers by Friday, July 17th. Email your answer to jteravskis@wgr-sw.com. One winner will be selected by a random drawing to receive a $25 gift card to Texas Roadhouse.

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