

the Rain events

A Monthly Newsletter on the California Industrial General Permit
By WQR Southwest, Inc.

January 2019



THE GOLDEN RULE

COLLECTING REPRESENTATIVE SAMPLES

From childhood, most of us were instilled with the concept of the **Golden Rule** – “do to others as you would want done to you”. It is called the Golden Rule because it summarizes the volumes of information on how to live well in one pithy statement – just treat people like you want to be treated. Unless you’re very new to California’s Industrial General Permit and collecting storm water samples, you’ve probably noticed that there is an abundance of instructions on how to get a “representative” storm water sample. But all of this information can be summarized with the short and pithy **Golden Rule of Sampling**. In this month’s edition of the **Rain Events**, we are going to explore this rule and how it applies to getting representative samples at industrial facilities.

Before we can talk about how to collect a representative sample, we need to first establish a working definition. In its most basic sense, you can think of a “representative sample” as 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**”. You may be surprised to find that 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 those individuals who also 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. Which side of the driveway or storm water catch basin should the sample be collected? It is in these situations when discretion and best professional judgement need to be applied. Remembering “not cleaner than average, not dirtier than average” will help determine the most representative place to grab or perform the field measurement of the sample.

Logistics do play into where samples are collected especially with sheet flow and drain inlets. Because Oil & Grease is a mandatory IGP testing parameter and no intermediate sample collection devices are allowed to be used in obtaining a sample for this analysis (meaning no dust pans, pitchers, tubing, or plastic bags), it can be extremely difficult to physically grab a sample. The Oil & Grease sample bottle must be filled directly from the water flow. So, we are typically looking for places where the water is deep enough (usually a puddle) or where it is flowing into a storm water catch basin. The problem is that these locations are many times not representative of the quality of water flowing offsite (usually dirtier). Another logistical challenge is what to do with BMPs that are present where we want to sample. It is common for a drain inlet to have a filter bag or device installed in it and/or be surrounded with compost socks. If we sample before these devices, we are not seeing the effect these final BMPs are having on water quality. It is equally problematic to remove these BMPs in order to open the drain inlet and obtain a sample. This action typically disturbs sediment and other pollutants that have been trapped in the BMPs and re-exposes them to the storm water discharge. This too is not representative of the water that was discharging before you disturbed everything.

That is why it is important to have a Qualified Industrial Stormwater Practitioner (QISP) evaluate your facility’s

sample locations. He or she will determine the most ideal spot and method to collect a representative sample. The following are some of the principles that QISPs use in determining how and where to obtain a representative sample:

- ☁ Try to direct surface sheet flow to an advantageous sample location by using permanent or temporary barricades and channels. We have seen samplers place sandbags to help create mini-dams behind which water pools and can be sampled. We have also seen facilities install “speed bumps” and a utility box to facilitate collecting a sample directly into the laboratory-supplied bottle. When sheet flow is consolidated to a single point and has to pass through a “bottle neck”, the water quality becomes more homogenous and we get a more representative sample.



- ☁ When installing drain inlet protection devices, look for BMPs that have sample ports to enable a sample to be collected after the BMP.



- ☁ Never use the bottle or any other device to “scoop up” storm water or scrap the surface – it will stir up sediment and other pollutants that aren’t representative of your discharge.

- ☁ Don’t use any intermediate containers for collecting Oil & Grease samples – the oil will stick to the sides of the intermediate container and will cause the analytical result to be inaccurate. It can lower, but in some cases increase, the oil & grease concentration.

- ☁ Try to analyze pH in flowing water. We have found that, almost always, we get more favorable results when we do so. And, you cannot get any more representative than testing the water as it discharges.

- ☁ Make sure the sample location is representative of all water leaving from that part of the facility. A sample collected of surface water entering a drain inlet may exclude the water discharging through the pipe at the bottom of the drain inlet.



Understand your facility’s drainage so that you know exactly where you need to collect samples. In our

experience, most samples collected that are not “representative” are actually dirtier than what was really discharging. This means that many facilities may have entered ERA Level 1 or 2 just because they had bad sampling techniques and were not employing the **Golden Rule**.



Have questions about sampling?
Give us a call at (209) 334-5363, ext. 114

“To Do List” for January:

- ☁ Perform the January monthly inspection
- ☁ If you’re not finished already, get everything ready to collect the last two storm water samples for the 2018-2019 storm water year.
- ☁ Make sure all of your sample results for the first half of the 2018-2019 year have been uploaded to SMARTS. Remember, Ad Hoc reports must be submitted within 30 days of collecting a sample.

IGP Amendments

On November 6, the State Water Resources Control Board adopted the new amendment to the Industrial General Permit. This new amendment will be effective on July 1, 2020. But prior to the date it becomes effective, the unofficial newly amended permit is available for public use on the Water Board’s website until the amended permit is officially certified by the clerk. You can find the permit here:

https://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/industrial/unoff_igp_amend.pdf

Also, on the State Water Resources Control Board’s website is a new mapping tool. The mapping tool displays the waterbody(ies) or watersheds with new TMDL-related Permit requirements. This mapping tool serves as guidance for locating TMDL-related requirements specific to an industrial facility. You can find that mapping tool here:

https://www.waterboards.ca.gov/water_issues/programs/stormwater/industrial.html

Please contact us if you have any questions ...

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