

Acidic or Caustic?



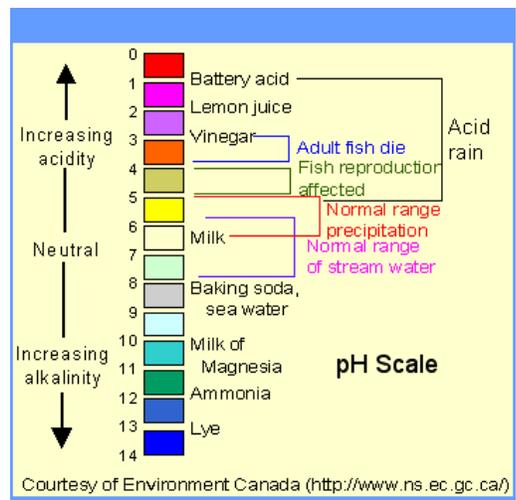
One of the 4 basic California Industrial General Storm Water Permit (IGP) required sampling parameters is testing for hydrogen ion units better known to most of us as “pH.” While most of us know that pH has to do with how acidic or basic the water is; we may be unsure of what pH is actually measuring and how the changes in pH affect storm water.

In this issue of “*The Rain Events*” we want to give you some basics on pH ... what it is, what affects it, and how to measure it.

The pH scale measures how acidic or basic the storm water sample is on a scale of 0 to 14. A pH of 7 is neutral. A pH less than 7 is acidic. A pH greater than 7 is basic (also referred to as caustic or alkaline).

The pH scale is logarithmic, which means each whole pH value below 7 is ten times more acidic than the higher value. For example, pH 5 is ten times more acidic than pH 6 and 100 times (10 times 10) more acidic than pH 7. This is also true for pH values above 7, each of which is ten times more basic than the next lower whole value. For example, pH 9 is ten times more basic than pH 8 and 100 times (10 times 10) more basic than pH 7.

Pure water is neutral. But when chemicals or pollutants are mixed with water, the water mixture can become either



acidic or basic. Such is the case when storm water comes into contact with ammonia, sulfur, battery acids, lime, cement, wet or fresh concrete, and other pollutants. This mixing can happen on the ground with runoff, or can happen in the atmosphere with air pollutants, which is how we get “acid rain”.

When acid rain or pH impacted storm water runoff collect in streams and ponds, the pH of that water body is changed. Even slight pH changes in streams harm fish - especially sensitive juvenile fish and other organisms.



In storm water applications, prevention is the key. It is usually much easier to prevent pollutants from coming into contact with storm water than to try to adjust the pH of the runoff.



What is the hold time for pH?

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Up to a few years ago, the answer was that the current California Industrial General Storm Water Permit (IGP) does not specify a hold time for pH. Currently many IGP Permittees (Permittees) have the pH in their storm water analytical samples tested by their laboratories. Those who have the laboratory test their pH find that as long as their pH is analyzed within 24 hours they normally do not have the validity of their pH results questioned?



Rain Events thought it would speak to an expert on the subject so we asked Christine Horn; the QA/QC Officer for McCampbell Analytical Inc (McCampbell) located in Pittsburg CA what is the holding time for sampling pH in California?

She said that McCampbell follows the required sampling methods based on the Federal Register issued May 18, 2012 which outlines the latest sampling test procedures for the analysis of pollutants under the Clean Water Act” found in Code of Federal Regulations 40CFR136.3. 40CFR136.3 Table IB shows the sampling method and 40CFR136.3 Table II shows the hold times. According to Table IB, pH is to be tested within 15 minutes of being sampled. She went on to say that due to the Federal Registry 2012 update, they have members to their staff that perform field pH when required.

While it is true that the current IGP does not specify a hold time for pH, in the Standard Provisions section (§ C.5) of the IGP it states, “Proper operation and maintenance (referring to a Permittee's facilities and systems) also include adequate laboratory controls and appropriate quality assurance procedures.” Included in the appropriate quality assurance procedures are acceptable hold times for various sampling parameters including pH.

Rain Events contacted the Regional Water Quality Control Board - Central Valley Region (RWQCB) to ask what the hold time was for pH and was told that it was 15 minutes, as required in 40CFR136.3. Under the coming IGP, it will have consistent universal enforcement, since it is explicitly listed in the Draft IGP (see Draft IGP §XI.C)

Since under the current IGP, the hold time for pH is 15 minutes but it is rarely an issue of concern, one might ask, why should I go to the expense of acquiring a hand held pH meter?

Well WGR, the publisher of Rain Events has recommend for years, and will continue to recommend getting and using a calibrated pH meter to performed field pH testing within 15 minutes of collecting a storm water sample for several reasons:

1. While it is not regularly enforced, sampling pH within 15 minutes is a regulatory requirement which applies to storm water and any Permittee can have the RWQCB demand the hold time be followed.

29758 Federal Register / Vol. 77, No. 97 / Friday, May 18, 2012 / Rules and Regulations		
ENVIRONMENTAL PROTECTION AGENCY	by the Director of the Federal Register on June 18, 2012. For judicial review purposes, this final rule is promulgated as of 1:00 p.m. (Eastern time) on June 1, 2012 as provided at 40 CFR 23.2 and 23.7.	Pennsylvania Ave. NW DC 20460, 202-566-1010 taylor.maria@epa.gov), regarding the changes to and whole effluent toxic contact Robin Oshiro, E Analysis Division (4303 Office of Science and T Pennsylvania Ave. NW DC 20460, 202-566-1010 oshiro.robin@epa.gov).
40 CFR Parts 136, 260, 423, 430, and 435	ADDRESSES: EPA has established a docket for this action under Docket ID No. EPA-HQ-OW-2010-0192. All documents in the docket are listed on the http://www.regulations.gov Web site. Although listed in the index, some information is not publically available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other materials, such as copyrighted material, are not placed on	SUPPLEMENTARY INFORMATION
[EPA-HQ-OW-2010-0192; FRL-9664-6]		A. General Information
RIN 2040-AF09		1. Does this action app
Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act; Analysis and Sampling Procedures		
AGENCY: Environmental Protection Agency (EPA).		
ACTION: Final rule.		

2. Once collected, pH has a tendency to degrade down in most cases or in some cases rise (depending on what substances may be in the water). If the pH of your storm water sample is just within the benchmark range at the time of collection, by time the storm water is analyzed in the laboratory, it may very well have degraded below or elevated above the benchmark range.
3. The 15 minute hold time requirement has been in the last three drafts IGPs and is not expected to change once the Draft IGP is adopted. It would be prudent to get into the habit of calibrating and using a pH meter now.

“To Do List” for October:

- Print out and place new forms in your storm water observation and sampling data book.
- Perform the 2nd Quarter Non-Storm Water Observation (Forms 2 & 3) by December 31.
- Sample the first quarter storm event if you have not already done so.
- Perform and document your monthly storm water inspections (Form 4).



STORM WATER AWARENESS WEEK 2013

The 2nd Annual Storm Water Awareness Week was a great success! Thank you to everyone who participated. We covered the State with 36 workshops from Chula Vista to Chico and the Bay Area to Lake Tahoe. Approximately 400 individuals signed up and there were nearly 700 registrants for the various workshops (some people attended more than one workshop). We have received many very positive comments about the quality of the workshops and the presenters. It is apparent that there is a big demand for this type of storm water education. Please watch for news about next year's event.

Still need your crew trained to take storm water samples, measure pH in the field, and do monthly observations?

WGR will come to your facility and provide a two-hour training session for **\$425**.

Appointments must be booked with aortiz@wgr-sw.com and facilities must be located within 30 miles of our Lodi or Los Alamitos offices. Discount pricing is also available for facilities farther than 30 miles, please contact Aaron Ortiz for more details. Offer does not apply to prepaid compliance programs.

We Have a **September** Contest Winner!



Cody Cowgill submitted the winning answer!

The question was...

On what day does the storm season begin for the IGP?

The answer is...

October 1st

Cody wins \$25 at



Great job!

Qualifying Storm Event

What storms in accordance with the current IGP are eligible to be sampled ?

- Occurs during the wet season, October 1st – May 30th
- Preceded by at least 3 days without a discharge
- A storm that produces enough precipitation to cause runoff
- Occurring within the start of or during regularly scheduled operating hours

Sampling Exemptions

1. It is not a “qualifying rain event”.
2. During dangerous weather conditions such as flooding and electrical storms.
3. Outside of scheduled site business hours.

Remember to document if any of these exemptions occur

Industrial General Permit Training Team (IGPTT)

The State Water Board formed the IGPTT and are on track with its development of leveraging technology to replace some of the live training and thus reduce some of the training burden placed on the business community. The IGP Training Content Subcommittee has determined what training topics are best suited for online modules and which topics are best suited for in class session(s). The IGP Training Content Subcommittee team members are now in the process of developing the modules. Look for continual updates on the IGPTT activities and progress in future Rain Event editions.

Please contact us if you have any questions ...

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Technical Questions about Storm Water Compliance? Call ...

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Chelsea Dreyer, cdreyer@wgr-sw.com, (310) 629-5259

November Storm Water Contest

Try it out! You can win!

By **November 8, 2013**, submit a response for the following question by email to steravskis@wgr-sw.com.

Question: Name an “Allowable” Non-Storm Water Discharge (NSWD)?

All persons submitting a correct answer will be placed in a drawing. The winner will receive a \$25 gift card to Chipotle.





October Specials

pH Solution Packets
(4.0,7.0,& 10.0 X 5)

\$31.00

Single use pH solution packets. This box set includes 5 of each buffers (4.0, 7.0, & 10.0). The set also includes bonus rinse packets.

Model: WD-35653-04



BMP OUTLET'S Product Spotlight

Oakton Turbidity Standards



Recently Oakton redesigned how it packages and retails its Turbidity replacement standards for the T-100 Turbidity Meter. Previously, the replacement standards were packaged as four 10 ml cuvettes with the shelf life lasting only 4-6 months. The newly packaged replacement standards (pictured above) come in four 60 ml poly containers and have a shelf life of 10 – 12 months. The turbidity standard's price has increased with this change from \$238 to \$289. This may seem like a significant increase, but the standard's shelf life is twice the previous standards shelf life. Plus, the increased 60 ml size allows up to 6 T-100 unit's standards to be replenished. That is less than \$50 per unit.

If you are interested in purchasing a set of these replacement standards, visit us at www.bmpoutlet.com , or email us at sales@bmpoutlet.com. In order to ensure the freshest possible standards from the factory please allow up to 2 weeks for delivery.

Product Specifications:

- Includes one each of 60-mL HPDE bottle of four NTU standards: 0.02, 20.0, 100 and 800 NTU.

Oakton pH Tester 30

\$115.00

Three-point calibration
±0.01 pH accuracy
Simultaneous temperature display



Up to \$10 off...

Hornet's Nest Drain Inlet Filter



\$45 (Bag Only) or \$55 (w/ Oil Pillow)

A unique, under-grate storm drain filter. The oversized base allows the filter to be used with a variety of size and shape drain inlets. Simply insert the filter, place the grate into place and trim the excess material for a custom fit and clean appearance. The yellow webbing secures the filter to the grate and doubles as lifting straps to quickly and easily remove the filter, grate and all, for simple cleaning. The sediment collection cone has 4 overflow portals to ease congestion during heavy storm events.

Material - 8 ounce non-woven geotextile
Strapping - Weather resistant 2" polypropylene webbing
Flow Rate - 90 gpm/ft
Dimensions - 48" x 36"

