FACT SHEET

General Permit for Confined Animal Facilities

Tier 1 Water Quality Monitoring Guidance

Monitoring Requirements—at a glance

(details below, and in Monitoring and Reporting Program R2-2016-0031*

1. Sample surface water during 3 rain events annually
2. Visually inspect throughout the year. Take photos of rainy season preparations
3. Measure residual dry matter (RDM) for grazing lands 50 acres or larger (see separate RDM guidance)

Surface Water Sampling Procedures

When?

- During or directly following each of 3 major storm events, after at least 1 inch of rain per 24 hours. Sampling events must be at least 14 days apart.

Where?

- Within nearby water coarse, upstream and downstream of animal confinement areas, or before your site runoff enters the water coarse
- Near high-use and high-risk areas (document sample sites on a facility map, including proximity of the confined facilities, waste storage and/or manure application areas)

How?

- Use clean container / take representative sample
- Test on-site with strip kits and water quality probe, or send samples to a CA accredited lab**
- Test each sample immediately for temperature, pH, total ammonia and specific conductance

* General Permit documents are on our website here: https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/agriculture/CAF.html

** Find an accredited lab near you here: https://www.waterboards.ca.gov/drinking_water/certlic/labs/

Testing Your Water Samples

Why Does the General Permit Require Testing for Total Ammonia Nitrogen?

Fish pull oxygen and other gases from water through their gills to breathe. When dissolved ammonia gas (Un-ionized Ammonia Nitrogen) gets into waterways, the fish pull the ammonia gas through their gills. Depending on the concentration of ammonia gas dissolved in the water, the fish can become very sick, or if the concentration is high enough, can die. Ammonia is a colorless substance that can accumulate in animal waste and any water that may come into contact with that waste.

How Do I Test My Water Sample?

The concentration of Un-ionized Ammonia Nitrogen can be calculated by measuring temperature, total Ammonia-Nitrogen (using a test strip), pH, and consulting the attached Un-ionized Ammonia look-up tables. You are also required to measure the specific conductance of each sample, to determine the concentration of dissolved salts. High levels of dissolved salts can be an indication of animal waste pollution.

Materials Needed:

- ⇒ Total Ammonia-Nitrogen measuring kit (test strips and tubes)
- ⇒ Sample containers
- ⇒ Temperature measuring device
- ⇒ pH measuring device
- ⇒ Specific conductance measuring device
- ⇒ Record book and pen for noting sample data (see Annual Report form for sample data chart)

Procedures: Follow the directions of the particular brand of test strips purchased. The general procedure is as follows (independent of brand):

1. Pour sample into test tube container.
2. Dip the test strip into the sample for the suggested time (5-30 seconds). The time the strip will be in the samples varies by brand of test strip.
3. Remove the test strip from the sample and wait the suggested time before comparing the test strip color to the color scale on the package container.
4. Note the amount. This is your approximate Total Ammonia-Nitrogen concentration.
5. Measure the sample temperature, pH and specific conductance in the field at the time of sampling.
6. On the colored table (pages 5 and 6) that corresponds to your approximate Total Ammonia-Nitrogen concentration, find the approximate Un-ionized Ammonia-Nitrogen concentration based on your field measurement of pH and temperature.

What To Do With Testing Results

Next Step

After completing Step 6, what color is the box that contains your sampling result for Un-ionized Ammonia-Nitrogen?

If the box is blue, the concentration is low and should not affect most aquatic life.

If the box is yellow, the concentration is medium and could affect aquatic life. You should evaluate what is happening at your facility to cause the level to be so high.

If the box is brown, the concentration is high and is considered harmful to many aquatic organisms. Evaluate your operations to determine what is causing the high levels and **STOP THE DISCHARGE IMMEDIATELY.**

Note: If the Total Ammonia-Nitrogen concentration in your sample is greater than 6.0 ppm on the test strip scale, you can assume that the Un-ionized Ammonia-Nitrogen concentration is high enough to be a threat to water quality. Note the test result in your record book as "greater than 6.0 ppm".

Record and Report Results

Keep a copy of all your sampling results (including the date and time of the sampling) with other records at your facility. Be prepared to show the results to a Water Board staff person during a site inspection and to include the results in your Annual Report.

On-site testing provides owners a real-time tool to detect facility problem areas and to prevent pollutant discharges. Document what corrective actions are needed or have been implemented on your facility, and report your progress in your Annual Report.

Comments on Total Ammonia-Nitrogen Test Strips and Portable Measuring Devices:

Total Ammonia-Nitrogen test strips can be purchased at major aquarium supply stores or online. The charts in this Fact Sheet are set up for test strips reading 0.25, 0.5, 1.0, 3.0, and 6.0 mg/l Total Ammonia-Nitrogen.

Several brands of test strips have been evaluated by Water Board staff. All brands tested gave consistent results; Hach brand strips were easiest to use. A package containing 25 test strips and several test tubes should cost about $24.

Portable devices that measure specific conductivity, temperature, or pH can be purchased online and will cost from $15 to $100, depending on the number of functions and if calibrations solutions are included.

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Tier 1 Water Quality Monitoring Guidance

Visual Inspection Requirements and Guidance

Facility operators must visually Inspect their animal facilities to confirm that their Ranch Water Quality Plan is fully implemented and is effective in keeping clean water clean, controlling erosion and preventing pollutants from moving to surface and groundwaters. Document any threats to water quality you observe and also document the actions you take to correct/remove the threat. By October 31, take photos of the pollution prevention measures implemented prior to the wet season. These photos must be submitted each year with the Annual Report due on November 30th.

Daily Inspection

- Inspect all outdoor areas for any dry weather discharges to waterways or storm water flow pathways. If observed, record and eliminate.
- Inspect animal confinement areas to confirm that animals are excluded from streams and stream crossings are not a source of pollutants.
- Inspect solid waste storage areas to ensure full containment and protection from storm water.

Rain Event Inspections

(before, during and after each rain event)

- Are waste storage areas and retention structures intact? Is any waste running off?
- Inspect animal confinement areas including corrals, paddocks, travel lanes and wash racks. Where does storm water runoff occur and are more controls needed?
- Observe where runoff enters the closest receiving water, upstream and downstream of all facilities. Does the water appear more cloudy downstream? Any other changes?
- Identify sources of sediment and implement erosion control where needed.

Do you have 50 or more acres of grazing lands?

If yes, these lands are required to be inspected:

- Twice during the dry season (at least one must be conducted during September, before the rainy season)
- Monthly during the rainy season (before or after a rain event)

Do you apply manure or compost to land?

If yes, you must ensure that each application does not result in runoff to surface waters, is applied at appropriate rates, and is located at least 100 feet from any surface waters.

You are required to:

- Inspect application areas once during each spreading event.
- Record dates, locations, volumes, weather conditions, and any erosion or non-compliance conditions.