OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION
WASHINGTON, D.C. 20460

January 30, 2026

Michele Lussos
Regulatory Consultant
Diversified Waterscapes Inc.
Laguna Nuguel, CA 92677

Subject: Label Amendment - Registration Review Mitigation for Copper Compounds
Product Name: Formula F-30 Algae Control
EPA Registration Number: 27588-2
Case Number: 606384
Application Date: June 30, 2022, and January 22, 2026

Dear Michele Lussos:

The Agency, in accordance with the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, has completed reviewing all the information submitted with your application to support the Registration Review of the above referenced product in connection with the Copper Compounds Interim Decision, and has concluded that your submission is acceptable. The label referred to above, submitted in connection with registration under FIFRA, as amended, is acceptable.

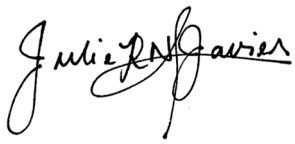
Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide, Fungicide, and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance Assurance.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling and must be used at your next label printing. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may

distribute or sell this product under the previously approved labeling for 12 months from the date of this letter. After 12 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

If you have any questions about this letter, please contact Concepción Rodríguez by phone at 202-566-0820, or via email at rodriguez.concepcion@epa.gov.

Sincerely,



Julie Javier, Team Leader
Risk Mitigation and Implementation Branch 4
Pesticide Re-Evaluation Division
Office of Pesticide Programs

ENCLOSURE: Stamped label

COPPER	GROUP	NOT CLASSIFIED	HERBICIDE

MASTER LABEL

Certified to NSF/ANSI/CAN 60

FORMULA F-30™ ALGAE CONTROL

Algaecide/Bactericide†

Molluscicide††

FOR USE IN LAKES, PONDS, RESERVOIRS, CANALS, LAGOONS, SWIMMING POOLS, SPAS, HOT TUBS AND OTHER LISTED WATER SYSTEMS (†Non public Health)

ACTIVE INGREDIENT:	
Copper Sulfate Pentahydrate*	10.9%
CAS No. 7758-99-8	
OTHER INGREDIENTS:	89.1%
TOTAL:	100.0%

*Metallic Copper Equivalent: 2.7%

EPA Reg. No. 27588-2 EPA Est. No. 27588-CA-01

Net Contents: 1 Quart, 1 Gallon, 2.5 Gallons, 5 Gallons, 30 Gallons, 55 Gallons, 275 gallon tote
††Not for use as a Molluscicide in CA

Manufactured by:
Diversified Waterscapes, Inc.
LAGUNA NIGUEL, CA 92677

KEEP OUT OF REACH OF CHILDREN

CAUTION

FIRST AID	
IF SWALLOWED:	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do NOT induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
IF IN EYES:	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
IF ON SKIN OR CLOTHING:	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact INFOTRAC at 1-800-535-5053, 24 hours a day seven days a week for emergency medical treatment information.	

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes or clothing.

Pilots must use an enclosed cab that meets the definition listed in the WPS for agricultural pesticides [40 CFR 170.305].

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Mixers, loaders and applicators must wear the following: Long-sleeved shirt, long pants, and shoes and socks.

Follow the manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove clothing/PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic invertebrates. Waters treated with this product may be hazardous to aquatic organisms. Treatment of aquatic weeds and algae can result in oxygen loss from decomposition of dead algae and weeds. This oxygen loss can cause fish and invertebrate suffocation. To minimize this hazard, do not treat more than ½ of the water body (**excluding water infrastructure and constructed conveyances such as drainage canals, ditches and pipelines or intakes and aqueducts for drinking water or irrigation use**) to avoid depletion of oxygen due to decaying vegetation. Wait at least 14 days between treatments. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas. Consult with the State or local agency with primary responsibility for regulating pesticides before applying to public waters, to determine if a permit is required.

Fish Advisory Statement: This copper product is toxic to fish and aquatic organisms. Unlike most organic pesticides, copper is an element will not break down in the environment and will therefore accumulate in sediment with repeated applications. Copper is a micronutrient, but its pesticidal application rate exceeds the amount of copper needed as a nutrient.

Certain water conditions including low pH (≤ 6.5), low dissolved organic carbon (DOC) levels (3.0 mg/L or lower), and "soft" waters (i.e., alkalinity less than 50 mg/L), increases the potential acute toxicity to non-target aquatic organisms.

NOTE: Trout, koi and other species of fish may be killed at the application rates stated on this label. However, fish toxicity generally decreases when the hardness of the water increases. Consult your state fish and game agency before applying this product to public waters.

PRODUCT INFORMATION

Formula F-30 when properly applied, will control a broad spectrum of algae and suppress non-public health bacteria and bacteria that cause taste and odor problems in impounded waters, lakes, ponds, lagoons, wastewater lagoons, reservoirs, livestock watering systems, potable water supplies[+], sedimentation basins, swimming pools, spas, hot tubs and other water systems as described in this label. Formula F-30 may be also be used for suppression of non-public health bacteria and toxic gases resulting from bacterial action in sewage lagoons, feedlot run off pits, animal confinement facilities and other ponds containing organic matter or algae.

[+]Potable Water Supplies = Water destined to be used as drinking water.

Especially effective results have been obtained against spirogyra, cladophora, vaucheria, chara, microcystis, ulathrix and oscillatoria.

If treated water is to be used as a source of water for human consumption, the metallic copper residue must not exceed 1 part per million (ppm). This water must receive additional and separate potable water treatment.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

The maximum dosage per application is 1ppm of metallic copper (10gallon of F-30) for all use sites.

The maximum number of treatments per year is 17 with the minimum retreatment interval of 14 days. **DO NOT** apply more than 17ppm of metallic copper (170 gallon of F-30) per year. No more than ½ of any body of water that may contain fish may be treated at one time.

Aquatic Uses (excluding swimming pools, spas, hot tubs, fountains and aquatic agriculture): water treated with this product may be hazardous to aquatic organisms. Treatment of aquatic weeds and algae can result in oxygen loss form decomposition of dead biomass. This oxygen loss can cause fish and invertebrate suffocation. To minimize this hazard, do not treat more than ½ of the water body (excluding water infrastructure and constructed conveyances such as drainage canals, ditches and pipelines or intakes and aqueducts for drinking water or irrigation use) to avoid depletion of oxygen due to decaying vegetation. Wait at least 14 days between treatments. Begin Treatment along the shore and proceed outward in bands to allow fish to move into untreated areas. Consult with the state or local agency with primary responsibility for regulating pesticides before applying to public waters to determine if a permit is required.

Application of algaecides to high density blooms of cyanobacteria can result in the release of intercellular contents into the water. Some of these intracellular compounds are known mammalian hepato- and nervous system toxins. Therefore, to minimize the risk of toxin leakage, manage cyanobacteria effectively in order to avoid applying this product when blooms of toxin-producing cyanobacteria are present at high density. In situations where rapidly reproducing toxic algal species pose a public health threat to drinking or recreational water resources, applicators must receive authorization for applicable state, local, or tribal water resources authorities to apply copper at intervals shorter than 14 days should the circumstance demand.

Certain water conditions including low pH (≤6.5), low dissolved organic carbon (DOC) levels (3.0mg/L or lower) and "soft" waters (i.e. alkalinity less than 50mg/L) increases the potential acute toxicity to non-target aquatic organisms. The application rates on this label are appropriate for water with pH values > 6.5, DOC levels > 3.0mg/L, and alkalinity greater than 50mg/L. Avoid treating waters with pH values < 6.5, DOC levels >3.0, and alkalinity less than 50ppm (e.g., soft or acid waters), as trout and other sensitive species of fish may be killed under such conditions if present.

Consult your state department of natural resources or fish and game agency before applying this product to public waters. Permits may be required before treating such waters.

Pre-Application Dose Application: For Algae, applicators should conduct initial dose determination tests simulating a full-scale treatment program to determine the minimum efficacious concentrations for eliminating the target species, unless an effective dose is already known for the given target pest population.

Restrictions: Pilots must use an enclosed cab that meets the definition listed in the WPS for agricultural pesticides [40 CFR 170.305].

ENFORCEABLE SPRAY DRIFT MANAGEMENT

MANDATORY SPRAY DRIFT MANAGEMENT

Aerial Applications:

- Do not release spray at height greater than 10ft above the vegetative canopy or water, unless a greater application height is necessary for pilot safety.
- Applicators are required to use a medium or coarser droplet size in accordance with the most current version of the American Society of Agricultural & Biological Engineers Standard 641 (ASABE S641).
- Do not apply when wind speed exceeds 15mph at the application site. If the windspeed is greater than 10mph, the boom length must be 65% or less of the wingspan for fixed wing aircraft and 75% or less of the rotor diameter for helicopters. Otherwise, the boom length must be 75% or less of the wingspan for fixed-wing aircraft and 90% or less of the rotor diameter for helicopters.
- Applicators must use ½ swath displacement upwind at the downwind edge of the applications area.
- Do not apply during temperature inversions.

Ground Boom Applications:

- Apply with the spray release height recommended by the manufacturer, but no more than 4 feet above the ground or crop canopy.
- Applicators are required to use a medium or coarser droplet size in accordance with the most current version of the American Society of Agricultural & Biological Engineers Standard 572 (ASAE S572).
- Do not apply when wind speeds exceed 15 miles per hour at application site.
- Do not apply during temperature inversion

SPRAY DRIFT ADVISORIES

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT. BE A WARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

IMPORTANCE OF DROPLET SIZE

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

Controlling Droplet Size- Ground Boom

- Volume- Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure- Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle – Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

Controlling Droplet Size- Aircraft

- Adjust Nozzles- Follow nozzle manufacturers recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight

BOOM HEIGHT- Ground Boom

Use the lowest boom height that is compatible with the spray nozzles that will provide uniform coverage. For ground equipment, the boom should remain level with the crop and have minimal bounce.

RELEASE HEIGHT- Aircraft

Higher release heights increase the potential for spray drift. When applying aerially to crops, do not release spray at a height greater than 10ft. above the crop canopy, unless a greater application height is necessary for pilot safety.

SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

TEMPERATURES AND HUMIDITY

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoiding applications during temperature inversions.

WIND

Drift potential generally increases with wind speed AVOID APPLICATIONS DURING GUSTY WIND CODITIONS> Applicators need to be familiar with local wind patterns and terrain that could affect spray drift

OTHER STATE AND LOCAL REQUIREMENTS: Applicators must follow all state and local pesticide drift requirements regarding application of copper compounds. Where states have more stringent regulations, they must be observed.

EQUIPMENT: All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers or surrogates.

RESISTANCE MANAGEMENT

Water bodies or management units should be scouted prior to application to identify the algae/bacteria/mollusk species present and their growth stage to determine if the intended application will be effective. Water bodies or management units should be scouted after application to verify that the treatment was effective.

Suspected algaecide/bactericide/molluscicide-resistant algae/bacteria/mollusks may be identified by these indicators:

- Failure to control an algae/bacteria/mollusk species normally controlled by the algaecide/bactericide/molluscicide at the dose applied, especially if control is achieved on adjacent algae/bacteria/mollusks;
- A spreading patch of non-controlled algae/bacteria/mollusk species; and
- Surviving algae/bacteria/mollusks mixed with controlled individuals of the same species.

Report any incidence of non-performance of this product against a particular **algae/bacteria/mollusk** species to your retailer, or representative. If resistance is suspected, treat **algae/bacteria/mollusk** escapes with an **algaecide/bactericide/molluscicide** having a different mechanism of action and/or use non-chemical means to remove escapes, as practical, with the goal of preventing further reproduction.

Implement the Early Detection, Rapid Response practice and Maintenance Control by using the following practices where possible:

- Identify **algae/bacteria/mollusk**s present in a management unit through scouting or history of the water body and understand the biology of target species.
- Applications should target **algae/bacteria/mollusk**s when populations are small and there is low biomass, early in the season to maximize efficacy.
- Applications should be made that the **algaecide/bactericide/molluscicide** contacts the **algae/bacteria/mollusk**. Use the appropriate application method for the use site/weed/chemical combination.
- **Algae/bacteria/mollusk** escape should not be allowed to flow downstream or reproduce wherever possible.
- Use a diversified approach toward pest management. Whenever possible incorporate multiple Pest-control practices such as mechanical control, biological management practices, and rotation of MOAs.
- Time applications to have the highest probability for control and minimize need for follow-up control measures. Apply during conditions that minimize **algaecide/bactericide/molluscicide** degradation (light/ temperature/ microbes) and/or dissipation (water exchange).

Contact your local sales representative, local water management agency, or extension agent to find out if suspected resistant pests has been found in your region. If resistant biotypes of target alga, bacteria mollusks have been reported, use the application rates of this product specified for your local conditions. Tank mix products so that there are multiple effective mechanisms of actions for each target pest.

USE IN CONTROL OF ALGAE, NONPUBLIC HEALTH BACTERIA, AND BACTERIA THAT CAUSE ODOR PROBLEMS

For effective algae control, proper chemical concentration should be maintained for a minimum of three hours contact time. The application rates in the chart are based on a static or minimal flow situation. Where significant dilution or loss of water from unregulated inflows or outflows (raceways) occur within a three hour period, Formula F-30 may have to be metered in.

- Identify the algae growth present as one of the following types: Planktonic (suspended), Filamentous (mat-forming), or Chara/Nitella.
- Determine the surface acreage (1 acre = 43,560 sq. ft.) and average depth of infected area.
- Refer to the "**DOSAGE TABLE**" to determine gallons of Formula F-30 to apply per surface acre.

HOW TO APPLY FORMULA F-30

Formula F-30 may be diluted with 5 parts water to 1 part Formula F-30 and coarse sprayed from shore. Application may also be done by pouring a measured amount of Formula F-30 directly from the container into the lake, pond, reservoir or irrigation canal to be treated at several points in the total water area. Generally, 1 gallon of Formula F-30 will treat 325,851.6 gallons (1 acre foot) of water to 0.1 ppm metallic copper. Apply Formula F-30 when algae growth first appears and the temperature of the water to be treated exceeds 60°F.

Larger bodies of water can be treated from the back of a moving boat by dragging a feeder hose behind the boat across the body of water.

Treatment of aquatic weeds and algae can result in oxygen loss from decomposition of dead algae and weeds. This oxygen loss can cause fish and invertebrate suffocation. To minimize this hazard, do not treat more than ½ of the water body to avoid depletion of oxygen due to decaying vegetation. Wait at least 14 days between treatments. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas.

HOW TO ESTIMATE GALLONS OF WATER/ACRE FEET

Measure Length (L), Width (W) and average Depth (D) in feet. Rectangular or Square shaped bodies of water**: L x W x D x 7.5 = approximate gallons.** Circular or Elliptical bodies of water**: L x W x D x 5.9 = approximate gallons.** Total gallons divided by 325,851.6 (gallons per acre feet) = Acre Feet.

DOSAGE TABLE

GAL. Formula F-30 Per Acre-foot Water	PPM Copper Sulfate Pentahydrate	PPM Metallic Copper
0.5 gal.	0.20	0.05
1.0 gal.	0.40	0.10
2.0 gal.	0.81	0.20

During periods of heavy algae growth, repeat application may be needed. If algae is still present after two weeks repeat the application as directed.

SPECIFIC INSTRUCTIONS

TO CONTROL ALGAE, NONPUBLIC HEALTH BACTERIA, and BACTERIA THAT CAUSE ODOR PROBLEMS IN Irrigation Reservoirs, Impounded Waters, Lakes, Ponds, Lagoons, Reservoirs, Livestock Watering Systems, Potable Water Supplies[+], Sedimentation Basins, and Ornamental Water Features or Fountains: For fish-bearing lakes, ponds, drinking water reservoirs, irrigation canals and other applications, apply at the rate of 1 gallon Formula F-30 per acre foot of water for preventive treatment of algae and nonpublic health bacteria. This will yield a concentration of 0.1 ppm metallic copper.

[+]Potable Water Supplies = Water destined to be used as drinking water.

If algae are present, treat at the rate of 2 gallons of Formula F-30 per acre foot of water. This will yield a concentration of 0.2 ppm metallic copper.

For applications without fish, apply at the rate of up to 2.5 gallons of Formula F-30 acre foot of water. This will yield a rate of 0.25 ppm metallic copper.

Do not exceed 10 gallons of Formula F-30 per acre foot of water (1.0 ppm metallic copper) under any circumstances for water destined for use as drinking water. Formula F-30 may be poured into the water manually after calculating the volume of water to be treated and measuring the quantity of Formula F-30 necessary to attain the desired concentration or by using an automated dispenser calibrated to release the required amount. For best results, disperse Formula F-30 evenly throughout the body of water on a sunny day when algae are near the surface. Do not apply Formula F-30 to water with less than 50 ppm alkalinity. Do not treat more than half of the water body at a time.

Maximum annual application rate of 21.9lbs of metallic copper per acre-foot (8 applications per year at up to 1pmm). This rate/frequency is calculated based on staggering the treatment of each half of the water body every 14 days (at a rate of 2.74 lbs. metallic copper per acre-foot = 1 ppm) for eight months (244 days.) In situations where rapidly reproducing toxic algal species pose a public health threat to drinking or recreational water resources, applicators must receive authorization from applicable state, local or tribal water resources authorities to apply copper in excess of 21.9 lbs of metallic copper per acre-foot (8 applications per year at up to 1 ppm).

TO CONTROL ALGAE or NONPUBLIC HEALTH BACTERIA and BACTERIA THAT CAUSE ODOR PROBLEMS IN Open Channel Irrigation Conveyance Systems, Ditches, Canals and Similar Irrigation Conveyances: To prevent algae growth, apply 1 gallon of Formula F-30 per acre foot of water to yield a rate of 0.1 ppm metallic copper in the water.

If algae are present, apply 2 gallons of Formula F-30 per acre foot of water to yield 0.2 ppm metallic copper. If this application is not effective make next application at a higher rate. Do not exceed 10 gallons of Formula F-30 per acre foot of water (1.0 ppm metallic copper). Minimum retreatment interval is 2 weeks. See Example Calculation Table below for continuous flow rates.

- Formula F-30 should be applied upstream from or directly on the algae or hydrilla when normal delivery of water (clogging of lateral headgates, suction screens, weed screens, and siphon tubes) begins to be interrupted. Delaying treatment could perpetuate a problem causing massing and compacting of plants. Heavy infestations and low flow may cause poor chemical distribution resulting in unsatisfactory control. Under these conditions, increasing water flow rate during application, may be necessary.

- Prior to treatment it is important to accurately determine water flow rates in the absence of weirs, orifices, or similar devices which give accurate water flow measurements, volume of flow may be estimated by the following formula. **Average Width (W) x Average Depth (D) x Velocity (V)[‡] (feet/second) x 0.9 = Cubic Feet per Second (C.F.S.)**

  Example: 26 x 5 x 1.7 x 0.9 = 198.0 cubic feet per second.

  [‡]Velocity (V) is the time it takes a floating object to travel a given distance. Dividing the distance traveled (feet by the time (second)

will yield velocity (feet/second). This measurement should be repeated at least three times at the intended application site and then averaged.

After accurately determining the water flow rate in C.F.S. or gallons/minute, find the corresponding Formula F-30 rate in the chart below.

Example Calculation Table

WATER FLOW RATE		FORMULA F-30 DRIP RATE		
C.F.S.	Gal./Min.	Qts./Hr.	mL/Min.	Fl. Oz./Min.
1	450	1	16	0.5
2	900	2	32	1.1
3	1350	3	58	1.6
4	1800	4	64	2.1

- Calculate the amount of Formula F-30 needed to maintain the drip rate for a period of 3 hours by multiplying Qts./Hr. x 3: ml/Min. x 180: or Fl. Oz./Min. x 180. Dosage will maintain 0.3 ppm metallic copper in the treated water for the 3 hour period. Introduction of the chemical should be made in the channel at weirs or other turbulence creating structure to promote the dispersion of Formula F-30.
- Pour the required amount of Formula F-30 into a drum or tank equipped with a brass needle valve and constructed to maintain a constant drip rate. Readjust accordingly if flow rate changes during the 3 hour period.
    - Distance control obtained down the waterway will vary depending upon density of vegetation growth. Periodic maintenance treatments may be required to maintain seasonal control. Wait at least 14 days between applications.

TO CONTROL ALGAE OR NONPUBLIC HEALTH BACTERIA AND BACTERIA THAT CAUSE ODOR PROBLEMS IN Sprinkler, Drip, and Other Types of Irrigation Equipment or Chemigation Systems: Apply a soon as or prior to visible algae bloom or bacteria growth. Agitation is not required. Do not mix with basic substances. Pour the required amount of Formula F-30 Algae Control to be metered in into a drum or tank equipped with a brass needle valve and constructed to maintain a constant drip rate. Readjust accordingly if flow rate changes during the application period. For best results, Formula F-30 should be applied continuously for the duration of the water application.

Apply 1 to 3 quarts per hour per cubic foot per second depending upon amount of algae presence. See Example Calculation Table above. This will yield 0.3 - 0.9 ppm metallic copper.

TO CONTROL ALGAE AND NONPUBLIC HEALTH BACTERIA AND BACTERIA THAT CAUSE ODOR PROBLEMS IN
Swimming Pools, Spas and Hot Tubs: Apply appropriate rate of Formula F-30 Algae Control at various locations around your pool, spa or hot tub for thorough dispersement.

You will first need to estimate the gallon capacity of your pool:
Measure (L) Length, (W) Width, and (D) Depth in feet.
Square or Rectangular Pools: L x W x D x 7.5 = Gallons
Round or Oval Pools: L x W x D x 5.9 = Gallons

For pools with visible algae, apply at the rate of 1 to 4 Fl. Oz. of Formula F-30 Algae Control per 1,000 gallons of water, depending upon amount of algae presence. Use lower rate for less severe algae presence and higher rate for extremely severe presence. This will yield a rate of 0.25 to 1.0 ppm of metallic copper. Do not apply more than 4 Fl. Oz. (1.0 ppm) per 1,000 gallons of water per application. Every 14 days, test the copper level using a standard commercial swimming pool copper test kit.

For maintenance, apply a dosage of 15 mL of Formula F-30 Algae Control per 1,000 gallons of water every two weeks which will yield a rate of 0.125 ppm of metallic copper.

For spas and hot tubs with visible algae, apply at the rate of 3 mL per 100 gallons of water (0.25 ppm metallic copper).

For maintenance, apply 1.5 mL per 100 gallons of water (0.125 ppm metallic copper) every two weeks.

RESTRICTION:
Treated pool effluent should not be discharged where it will drain into lakes, streams, ponds or public water.

Discharge Direction for Commercial and Residential, Pool, Spas and Hot Tubs Uses:
Before draining a treated pool, spa or hot tub contact your local sanitary sewer and storm drain authorities and follow their discharge instructions. Do not discharge treated pool or spa water to any location that flows to a gutter, storm drain or natural water body unless discharge is allowed by state and local authorities.

BACTERIA ODOR CONTROL In Sewage Lagoons and Pits (except California)
Application rates may vary depending on amounts of organic matter (sewage) in lagoons and pits. Application should be done by pouring FORMULA F-30 directly from the container into the pit, lagoon or transfer line. Several application points speed up dispersal. Use 1 gallon of FORMULA F-30 in 325,851.6 gallons (1 acre foot) to yield a rate of 0.1 ppm of metallic copper. Non-public health bacteria and odors should be noticeably reduced in 1 to 2 weeks. Repeat application when odor reoccurs. Minimum retreatment interval is 14 days. See subsections below for instructions for specific types of sewage lagoons or pits.

For Feedlot Run-Off Lagoons (except California): Add a portion of the required dosage of FORMULA F-30 around the lagoon to speed dispersal of the product. A minimum of two applications per year (spring and fall) is recommended. Additional applications may be required as needed when the lagoon is pumped.

For Animal Confinement Pits (except California): If pits are located under the confinement buildings, add FORMULA F-30 directly to these pits. If the pits are outside, add FORMULA F-30 to the transfer line to the pit.

For Other Organic Sludges (except California): FORMULA F-30 must be thoroughly mixed with sludge.

MOLLUSCICIDE (Not for use as a molluscicide in CA)
Use in Open Waters to Control Quagga and Zebra Mussels in Ponds, Lakes, Lagoons, Reservoirs, and Potable Water Supplies*:
May be used as a curative measure when larval, juvenile or adult mussels have been found in open or slow-moving, calm waters. FORMULA F-30 quickly disperses because it has ionic diffusion properties and is miscible in water. Apply FORMULA F-30 near the surface of water and allow it to disperse. Alternatively, use a hose and pump to apply FORMULA F-30 to the depths, sites, and surfaces where infestation is the heaviest. For large areas, dispense in a channel, allowing breaks in the application of no more than 200 feet. For treatment of a body of water in which fish are present, do not treat more than half of the water at a time. Apply so that fish can move away from treated areas by beginning treatment near one shore and moving outward in bands. Delay treatment of the second half of the body of water for at least 14 days from the date of the last treatment of the first half.

The prescribed rate for effective control of adult and juvenile mussels is 4.0 to 32.0 parts per million FORMULA F-30 (i.e., 4.0 to 32.0 gallons of FORMULA F-30 per million gallons of water). This yields a rate of 0.120 to 0.960 mg/L (ppm) metallic copper. Repeated applications are permitted and may be necessary. Do not exceed 1.0 mg/L (equivalent to 33.33 ppm FORMULA F-30) metallic copper in any single application or in the treated water (background +applied). Allow at least 4 days for death of the mussels. Longer exposures and doses at or near the higher end of the allowable range may be necessary for cold water temperatures. If needed, repeated applications are permissible within the half of the water body being treated to maintain fatal concentrations of copper for sufficient time. Do not exceed a resulting concentration of 1.0 mg/L of metallic copper (background +applied copper) in the treated water for reapplications and repeated treatments. When treating the second half of a body of water, wait a minimum of 14 days after the last treatment of the first half of the body of water.

Longer exposure at lower doses – e.g., 5-30 days at 2.0 to 10.0 parts per million FORMULA F-30, to yield a rate 0.06 to 0.30 mg/L ppm metallic copper – may yield effective control. Use sites experiencing a severe infestation may need repeated dosage. The resulting concentration from any repeated doses must not exceed 1.0mg/L (ppm) metallic copper in the treated water (background + applied).

For treatments to whole waterbodies, administer copper at a rate up to 1 ppm (2.74 lbs. metallic copper per acre-foot) at a maximum annual rate 21.9 lbs. metallic copper per acre foot. Monitor the copper concentration and when it falls below the desired concentration. Monitor mussel populations and terminate the additional applications once mussels are dead or 14 days have passed since the initial application. Applicators must wait at least 14 days after the last application before making any additional applications.

*** Treatment of water supplies to be used for drinking must receive separate treatment for potability.**

Open Water Dose Rates for Molluscicide FORMULA F-30:

LOW DOSE

Acres	Depth (ft)	Acre-Ft to Treat	Millions Gallons to Treat	Desired ppm, FORMULA F-30	Desired ppm, as Copper	FORMULA F-30 Dose Rate (gals)	Desired ppm, FORMULA F-30	Desired ppm, as Copper	FORMULA F-30 Dose Rate (gals)
0.1	3	0.3	0.1	2.0	0.06	0.2	4.0	0.12	0.4
0.5	3	1.5	0.5	2.0	0.06	1.0	4.0	0.12	2.0
1	3	3.0	1.0	2.0	0.06	2.0	4.0	0.12	4.0
1	6	6.0	2.0	2.0	0.06	4.0	4.0	0.12	8.0
10	3	30	10	2.0	0.06	20	4.0	0.12	40
10	4.5	45	15	2.0	0.06	30	4.0	0.12	60
10	6	60	20	2.0	0.06	40	4.0	0.12	80
20	3	60	20	2.0	0.06	40	4.0	0.12	80
100	3	300	100	2.0	0.06	200	4.0	0.12	400
1000	3	3000	1000	2.0	0.06	2000	4.0	0.12	4000

MEDIUM DOSE

Acres	Depth (ft)	Acre-Ft to Treat	Millions Gallons to Treat	Desired ppm, FORMULA F-30	Desired ppm, as Copper	FORMULA F-30 Dose Rate (gals)	Desired ppm, FORMULA F-30	Desired ppm, as Copper	FORMULA F-30 Dose Rate (gals)
0.1	3	0.3	0.1	8.0	0.240	0.8	20	0.600	2
0.5	3	1.5	0.5	8.0	0.240	4.0	20	0.600	10
1	3	3.0	1.0	8.0	0.240	8.0	20	0.600	20
1	6	6.0	2.0	8.0	0.240	16	20	0.600	40
10	3	30	10	8.0	0.240	80	20	0.600	200
10	4.5	45	15	8.0	0.240	120	20	0.600	300
10	6	60	20	8.0	0.240	160	20	0.600	400
20	3	60	20	8.0	0.240	160	20	0.600	400
100	3	300	100	8.0	0.240	800	20	0.600	2000
1000	3	3000	1000	8.0	0.240	8000	20	0.600	20000

MAXIMUM DOSE

Acres	Depth (ft)	Acre-Ft to Treat	Millions Gallons to Treat	Desired ppm, FORMULA F-30	Desired ppm, as Copper	FORMULA F-30 Dose Rate (gals)
0.1	3	0.3	0.1	33.3	1.0	3.33
0.5	3	1.5	0.5	33.3	1.0	16.65
1	3	3.0	1.0	33.3	1.0	33.3
1	6	6.0	2.0	33.3	1.0	66.6
10	3	30	10	33.3	1.0	333
10	4.5	45	15	33.3	1.0	499.50
10	6	60	20	33.3	1.0	666
20	3	60	20	33.3	1.0	666
100	3	300	100	33.3	1.0	3330
1000	3	3000	1000	33.3	1.0	33300

References:
1 acre-foot = 325,851 gal
1 million gal = 3.07 acre-feet
1 hectare= 2.47 acres
1 meter = 3.28 feet
1ppm (1 part per million) = 1 mg/L and/or 1 gal per million gallons
1 gal= 3,785 mL

The following general formula should be used to determine dosages for a specified volume of water to be treated in order to achieve the desired concentration of metallic copper in the water:

$$\frac{Gallons\ of\ applied\ FORMULA\ F-30}{Million\ Gallons\ to\ be\ treated} \times\ 0.03 = parts\ per\ million\ Copper\ in\ the\ Treated\ Water$$

EXAMPLE: Treatment of 3 million gallons of water with 9.0 gallons of FORMULA F-30 will yield a final copper dose of 0.09 ppm copper:
(9.0 gals/ 3 million gallons) x 0.030= 0.09mg/L as copper = 0.09 ppm as copper

To ensure accuracy, always use volumetric measurement devices that are calibrated in accordance with the manufacturer's specifications.

Use in Flowing Waters to Control Quagga and Zebra Mussels in flowing potable water supplies*, canals, ditches, aqueducts, and equipment or structures that deliver the treated water directly to publicly owned water treatment facilities (e.g., pipes, intake structures, gatehouses, screens, pumping stations, weirs, penstocks): Use when larval, juvenile, or adult mussels have been detected in flowing water. When adult or juvenile mussels are present in flowing water, use as a curative measure. May be used as a preventative measure when adults and/or planktonic larval mussels have been detected.

*** Treatment of water to be used for drinking must receive separate treatment for potability.**

If mussels are present in flowing water, use FORMULA F-30 continuously to prevent the spread and colonization. A continuous dose may be applied to achieve a final dilution of 2.0 to 32 ppm FORMULA F-30 (0.06 to 0.96 ppm metallic copper, or mg/L). Do not exceed 1.0 ppm free metallic copper (background+ applied) in the flowing water, equivalent to 33.3 ppm, as FORMULA F-30. If adult mollusk are present, allow at least 4 days for mortality to occur; additional days may be necessary for well-established populations. Acceptable control will be obtained for most situations at a continuous dose of 2.0 to 10.0 ppm FORMAULA F-30 (i.e., 0.06 to 0.30 mg/L (ppm) metallic copper). Longer exposures and doses at or near the higher end of the allowable range may be necessary for cold water temperatures Continuous application may end when mussels are no longer present.

To prevent re-colonization after an infestation of mussels has been controlled, a continuous maintenance dose of 1.2 to 4.0 ppm FORMULA F-30 (yielding a metallic copper concentration of 0.036 to 0.120 ppm) may be applied.

Flowing Water Dosage Rates for FORMULA F-30:

LOW DOSE

cfs	Gal/min	MGD	Desired ppm, FORMULA F-30	Desired ppm, as Copper	FORMULA F-30 Feed Rate (fl oz/min)	FORMULA F-30 Feed Rate (ml/min)	Desired ppm, FORMULA F-30	Desired ppm, as Copper	FORMULA F-30 Feed Rate (fl oz/min	FORMULA F-30 Dose Rate (ml/min)
1	449	0.65	2.0	0.06	0.12	3.37	4.0	0.12	0.214	6.74
1.55	696	1.0	2.0	0.06	0.17	5.21	4.0	0.12	0.353	10.44
3	1,346	1.9	2.0	0.06	0.33	10.1	4.0	0.12	0.674	20.21
4	1,795	2.6	2.0	0.06	0.46	13.47	4,0	0.12	0.91	26.95
5	2,244	3.2	2.0	0.06	0.57	16.82	4.0	0.12	1.13	33.68
10	4,488	6.5	2.0	0.06	1.13	33.68	4.0	0.12	2.28	67.37
15.47	6,943	10	2.0	0.06	1.76	52.11	4.0	0.12	3.47	104.23
50	22,442	32	2.0	0.06	5.68	168.23	4.0	0.12	11.38	336.85
100	44,883	65	2.0	0.06	11.37	336.65	4.0	0.12	22.77	673.70
155	69,429	100	2.0	0.06	17.61	521.109	4.0	0.12	35.27	1042.25
1000	448,830	646	2.0	0.06	112.9	3, 366.54	4.0	0.12	227.87	6733.07

MEDIUM AND HIGH DOSE

cfs	Gal/min	MGD	Desired ppm, FORMULA F-30	Desired ppm, as Copper	FORMULA F-30 Feed Rate (fl oz/min)	FORMULA F-30 Feed Rate (ml/min)	Desired ppm, FORMULA F-30	Desired ppm, as Copper	FORMULA F-30 Feed Rate (fl oz/min)	FORMULA F-30 Dose Rate (ml/min)
1	449	0.65	9.38	0.30	0.54	15.72	30	0.96	1.70	50.37
1.55	696	1.0	9.38	0.30	0.83	24.44	30	0.96	2.63	77.96

3	1,346	1.9	9.38	0.30	1.59	47.22	30	0.96	5.11	150.93
4	1,795	2.6	9.38	0.30	2.13	62.96	30	0.96	6.81	201.85
5	2,244	3.2	9.38	0.30	2.67	78.70	30	0.96	8.52	251.85
10	4,488	6.5	9.38	0.30	5.31	157.22	30	0.96	17.02	503.70
15.47	6,943	10	9.38	0.30	8.22	242.59	30	0.96	26.30	777.78
50	22,442	32	9.38	0.30	26.67	787.04	30	0.96	85.19	2,516.66
100	44,883	65	9.38	0.30	53.15	1572.22	30	0.96	170.19	5,033.33
155	69,429	100	9.38	0.30	822.22	2,433.33	30	0.96	262.96	7,787.03
1000	448,830	646	9.38	0.30	531.48	15,729.61	30	0.96	1,701.85	50,333.28

MGD= Million Gallons per Day
cfs= Cubic Feet per Second

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.
PESTICIDE STORAGE: Keep container closed when not in use. Open dumping is prohibited.
PESTICIDE DISPOSAL: Pesticide spray mixture or rinsate that cannot be used according to label directions or chemically reprocessed should be disposed of according to procedures approved by Federal, State or Local Disposal Authorities.

(FOR NONREFILLABLE CONTAINERS, EQUAL TO OR LESS THAN 5 GALLONS)

Refillable containers: Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure 2 more times. Offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

NOTICE – To the extent consistent with applicable law, neither the manufacturer nor the seller makes any warranty expressed or implied, concerning the uses of this product other than indicated on the label. Buyer assumes all risk of use of this material when such use is contrary to label instructions. Read and follow the label directions carefully.