

Important Information About Adding Fertilizer When Using Reclaimed Water for Irrigation

January 2, 2020

All reclaimed water distributed in the Collier County Reuse Distribution System is compliant with all FDEP requirements. The quarterly average of nitrogen and phosphorus concentration in the treated reclaimed water produced at the North County Water Reclamation Facility (NCWRF) and the South County Water Reclamation Facility (SCWRF) are listed in Table 1. The Collier County Wastewater Department intends to provide the nitrogen and phosphorus sampling results to our reclaimed water customers quarterly, to allow for adjustments in fertilizer application.

When using fertilizer, it is the responsibility of the applicator to confirm with the procedures as directed in The Collier County Fertilizer and Urban Landscape Ordinance No. 2019-18. This Ordinance regulates the proper use of fertilizers by any applicator; requires proper training of Commercial and Institutional Fertilizer Applicators; establishes training and licensing requirements; establishes a Prohibited Application Period; specifies allowable fertilizer application rates and methods, fertilizer-free zones, low maintenance zones, and exemptions. The Ordinance requires the use of Best Management Practices which provide specific management guidelines to minimize negative secondary and cumulative environmental effects associated with the misuse of fertilizers. These secondary and cumulative effects have been observed in and on Collier County's natural and constructed stormwater conveyances, rivers, creeks, canals, springs, lakes, estuaries and other water bodies. Collectively, these water bodies are an asset critical to the environmental, recreational, cultural and economic well-being of Collier County residents and the health of the public. Overgrowth of algae and vegetation hinder the effectiveness of flood attenuation provided by natural and constructed stormwater conveyances. Regulation of nutrients, including both phosphorus and nitrogen contained in fertilizer, will help improve and maintain water and habitat quality.

TABLE 1	Nitrogen (mg/L)	Phosphorus (mg/L)
First Quarter 2019		
North Service Area	7.67	1.3
South Service Area	9.3	.28
Second Quarter 2019		
North Service Area	8.9	2.7
South Service Area	7.6	1.8
Third Quarter 2019		
North Service Area	8.0	1.6
South Service Area	11.2	1.5
Fourth Quarter 2019		
North Service Area	8.7	2.7
South Service Area	9.2	2.0

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Nitrogen Calculations

To calculate how much extra nitrogen is needed if you irrigate with reclaimed water please see the example below using Centipede and Bahia grass. You can modify this calculation by adapting this calculation to fit your landscaping area and types.

Rule for nitrogen — application rates for slow-release nitrogen are not to exceed 1 pound per 1,000 square feet per application. Application rates for quick-release nitrogen are not to exceed 0.7 pound per 1,000 square feet per application.

The required label limits for fertilizer application in south Florida is 2-3 pounds for Centipede grass and 2-4 pounds of Nitrogen annually, per 1000 ft² of turf.

- In this example assume the need for 3 pounds of nitrogen applied once a year:
- For this example, assume a 1,000 ft² yard
- Irrigate with reclaimed water per South Florida Water Management District Rules: ¾ - 1 inch (this calculation was done using one inch of irrigation) per 1,000 ft² per week of reclaimed water = 623 gallons per week (2,358 Liters). [Convert gallons to liters](#)
- If you receive reclaimed water from the SCWRF, use the 9.3 mg/L value for nitrogen in the reclaimed water.
- If you receive reclaimed water from the NCWRF, therefore you use the 7.67 mg/L value for nitrogen in the reclaimed water.

SCWRF Calculation:

Multiply 2,358 Liters x 9.2 mg/l = 21,693 mg of nitrogen applied per week or (1,128,067 mg/year) which equals 2.48 pounds of nitrogen per year before you add any fertilizer.

[Convert mg to pounds.](#) If we subtract the 2.48 pounds already present in the reclaimed water, then you only need to purchase and apply 0.51 pounds of nitrogen each year. 83% of nitrogen is already supplied by the reclaimed water in this example.

NCWRF Calculation:

Multiply 2,358 Liters x 8.7 mg/l = 20,514 mg of nitrogen applied per week or (1,066,759 mg/year) which equals 2.35 pounds of nitrogen per year before you add any fertilizer. If we subtract the 2.35 pounds already present in the reclaimed water, then you only need to purchase and apply 0.65 pounds of nitrogen each year. 78% of nitrogen is already supplied by the reclaimed water in this example.

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Phosphorous Calculations

As a rule, the University of Florida Institution of Food and Agricultural Sciences recommends soil testing for phosphorus content before any phosphorus fertilizer is applied.

Rule for phosphorus — application rates are not to exceed 0.25 pound per 1,000 square feet per application and are not to exceed 0.5 pound of phosphorus per 1,000 square feet per year.

- For this example, assume a 1,000 ft² yard
- Irrigate with reclaimed water per South Florida Water Management District Rules: $\frac{3}{4}$ - 1 inch (this calculation was done using one inch) per acre per week of reclaimed water = 623 gallons per week (2358 Liters).
- If you receive reclaimed water from the SCWRF, use the 2.7 mg/L value for phosphorus in the reclaimed water.
- If you receive reclaimed water from the NCWRF, therefore you use the .996 mg/L value for phosphorus in the reclaimed water.

SCWRF Calculation:

Multiply 2,358 liters of reclaimed water x 2 mg/L = 3,537 mg of phosphorus applied per week or (245,232 mg/year) which equals 0.54 pounds per year before you add any fertilizer. If we subtract the 0.54 pounds already present in the reclaimed water, then you only need to purchase and apply 0.0 pounds of phosphorus each year. 108% of phosphorus is already supplied by the reclaimed water in this example. A soil test for phosphorus should be conducted to determine if additional phosphorus from fertilizer is necessary.

NCWRF Calculation:

Multiply 2,358 liters of reclaimed water x 2.7 mg/L = 6,366 mg of phosphorus applied per week or (331,063 mg/year) which equals 0.73 pounds per year before you add any fertilizer. If we subtract the 0.73 pounds already present in the reclaimed water, then you only need to purchase and apply 0.0 pounds of phosphorus each year. 146% of phosphorus is already supplied by the reclaimed water in this example. A soil test for phosphorus should be conducted to determine if additional phosphorus from fertilizer is necessary.

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- ❖ Reclaimed water is supplemented with well water during high demand periods and constituents of influent are subject to change, therefore the levels of nitrogen and phosphorus in the reclaimed water may change.
- ❖ Total nitrogen was calculated as Total Kjeldahl Nitrogen (TKN) + Nitrate (NO₃) because NO₂ is not normally detected and therefore was not included.

Collier County Florida-Friendly Use of Fertilizer on Urban Landscapes - [Ordinance 11-24](#) and [Video](#)

To reduce the risk of fertilizer runoff contributing to nutrient pollution in county waters the Collier County Florida-Friendly Use of Fertilizer on Urban Landscapes Ordinance was adopted July 26, 2011. The ordinance has the following restrictions:

- Commercial Applicators must take the Green Industry Best Management Practices (GI-BMP) training;
- No application during identified storm “Watch” or “Warning” periods or when soils are saturated;
- No fertilizer within 10 ft of water body or wetland (3 ft with deflector or drop spreader);
- Do not leave fertilizer, grass clippings, or landscape trimmings on impervious surfaces (asphalt or concrete) or allow to enter stormwater drains or ditches, wetlands, or water;
- It is recommended that all landscape trimmings be removed within 10 ft of water or wetlands;
- Follow the product label application rates, the [UF/IFAS](#) recommendations, and [Florida Administrative Code 5E-1.003\(2\), Labeling Requirements for Urban Turf Fertilizers](#) (below);

Annual Fertilization Guidelines for Established Turfgrass Lawns

Nitrogen Recommendations (lbs N per 1000 sq. ft.)

Grass Type	Bahia	Bermuda	Centipede	St. Augustine	Zoysia
Spring/Summer	2	2	2	2	2
Fall/Winter	1	1	1	1	1
Maximum Annual Pounds	2-4	5-7	2-3	4-6	2.5-4.5

*Please use calculator at top of page and adjust your Nitrogen as being either 1 or 2 lbs depending upon seasonal recommendation in table.

Commercial and Institutional Applicators

As of January 2014 all commercial applicators must obtain a state fertilizer license, issued by [Florida Department of Agriculture and Consumer Services \(FDACS\)](#). The Green Industry Best Management Practices (GI-BMP) training is a requirement to qualify for state licensure.

The required BMP training can be obtained from:

- [Rookery Bay Project Greenscape](#)
- [UF/IFAS statewide training search](#)
- [Online training](#)
- [Find a certified fertilizer applicator](#)

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DIY Recommendations

Healthy plants help prevent erosion and can remove some nutrients from stormwater runoff. Applying just enough irrigation and fertilizer to maintain healthy active plants is the goal. Apply fertilizers only when needed and only when the plants are actively growing. Typical soils in Florida contain adequate

Phosphorus, don not use fertilizer with phosphorus unless soil testing indicates a deficiency. The application rates on the bag are maximums, often less will be effective. Homeowners should use fertilizers with a minimum of 30% of the nitrogen in slow release form. The Florida Yards and Neighborhood handbook below contains excellent guidance.

Homeowner Resources and Guidance

- [Florida Yards and Neighborhoods](#) – UF/IFAS & FDEP Program
- [The Florida Yards and Neighborhoods Handbook](#) 2015 Handbook (Current Version)
- [General Florida Friendly Information](#) Local Office: Collier County UF/IFAS Extension
- 14700 Immokalee Rd Naples, FL 34120
Phone: (239) 252-4800
[Collier County UF/IFAS Extension website](#)
- [3 Minute Nutrient Study Video from UF IFAS](#)
- [Calibrate your Fertilizer Spreader](#) - UF/IFAS
- [Fertilization of Palms and Landscapes](#)- IFAS ENH1009
- [Retail Sources for Fertilizer in Collier County](#)
- [Wholesale Sources for Fertilizers in Florida](#)
- [More Info on Landscaping, Irrigation, Pesticides and Stormwater Ponds](#)

For general questions on the Collier County Fertilizer Ordinance, please contact Pollution Control:

- pollution_control@colliercountyfl.gov
- or call 239-252-2502

To report a violation of the Fertilizer Ordinance:

- [Collier County Code Enforcement](#) online
- or call (239) 252-2440