

Southwest Florida Regional Planning Council Wastewater Resolution #2007-02

A RESOLUTION SUPPORTING THE REDUCTION AND ELIMINATION OF SURFACE WATER DISCHARGES FROM WASTEWATER TREATMENT FACILITIES, PROVIDING RECOMMENDED EXEMPTIONS;

WHEREAS, Southwest Florida is a region where the water quality of the bays, estuaries, rivers, lakes wetlands, bayous and the Gulf of Mexico is critical to the region's environmental, economic, and recreational prosperity and to the health, safety and welfare of the citizens of this region, and

WHEREAS, recent increased frequency and duration of red tide blooms and increased accumulation of red drift algae on local beaches and other algae and water related problems have heightened community concerns about water quality and cultural eutrophication of surrounding waters; and

WHEREAS, this resolution is part of a multi-pronged effort by the Southwest Florida Regional Planning council to reduce nutrient leaching and runoff problems by actions including, but not limited to, stormwater management, water conservation, septic systems, central sewage treatment, public education, restoration of surface and groundwater levels, and regional drainage of native habitats; and

WHEREAS, nutrients are essential elements for plant growth and are constituents in treated wastewater effluent; and

WHEREAS, nutrients from treated wastewater effluent can contribute to nitrogen and phosphorus loading within Southwest Florida's water resources;

NOW, THEREFORE, BE IT RESOLVED by the Southwest Florida Regional Planning council that the following provisions are recommended to local government jurisdictions in Southwest Florida as a basis for reducing and eliminating discharges of treated wastewater effluent nutrient constituents to open waters and to areas with groundwater transport of constituents of nutrients to open waters or conveyance to same.

SECTION 1: PURPOSE AND INTENT

- A. The Southwest Florida Regional Planning council declares its support for the reasonable regulation and control of surface water and adjacent area discharges of treated wastewater effluent containing nitrogen and phosphorus and hereby provides specific guidance for treatment and disposal in order to minimize the negative environmental effects said discharges have in and on Southwest Florida lakes, canals, estuaries, interior wetlands, rivers and near shore waters of the Gulf of Mexico. Collectively these water bodies are a natural asset, which are critical

to the environmental, recreational, cultural and economic well being of this region and the surrounding areas and contribute to the general health and welfare of the public. Recent red tide blooms, accumulation of red drift algae on local beaches, and the freshwater releases from Lake Okeechobee via the Caloosahatchee River have heightened community concerns about water quality and eutrophication of estuary, bay, river and coastal waters. Reduction of nutrients within the treated wastewater stream and or reduction of the wastewater stream itself into water bodies and adjacent areas affected by groundwater transport are a crucial step towards improving and maintaining water and habitat quality.

- B. The purpose of this Resolution is to provide specific recommendations and guidelines to be considered by local government jurisdictions in Southwest Florida for the regulation and control of treated wastewater discharges containing nitrogen and/or phosphorus.

SECTION 2: RECOMMENDED DEFINITIONS

The following are the minimum recommended definitions and the words; terms and phrases when used in this Resolution shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

AA residuals - "Class AA residuals" means Class A residuals that meet all the requirements of Rule 62-640.850, F.A.C. § 62-640.200(9), F.A.C.

Advanced Wastewater Treatment (AWT) - Advanced Wastewater Treatment (AWT) means treatment of Domestic Wastewater to achieve an effluent after disinfection containing not more than are 5 mg/l Biochemical Oxygen Demand (BOD), 5 mg/l of Total Suspended Solids (TSS), 3 mg/l Total Nitrogen, and 1 mg/l Total Phosphorus. § 403.086(4), F.S.

Application Site - "Application site" means a property (such as a farm, a ranch or a mining property) where residuals are applied to land. Application sites are identified as either agricultural sites or reclamation sites. § 62-640.200(5)

Department - "Department" means the Florida Department of Environmental Protection.

Disposal System - "Disposal system" means injection wells, effluent outfalls, subsurface drain systems, and other facilities utilized for the release of effluents into the environment. § 62-600.200(22), F.A.C.

Domestic Wastewater - "Domestic wastewater" means wastewater derived principally from dwellings, business buildings, institutions, and the like; sanitary wastewater; sewage. Where wastewater from sources other than typical domestic sources (e.g., industrial sources) is combined and treated with wastes from domestic sources, the determination of whether or not the wastewater treatment plant is designated as "domestic" shall be made by the Department considering any or all of the following: residuals classification; whether wastewaters have been pretreated or contain constituents within 50-150%, by concentration, of typical domestic wastewater; and whether the permittee, when not required to provide more stringent or otherwise specific levels of treatment, can provide assurance of facility compliance with domestic wastewater treatment standards contained in Chapter 62-600, F.A.C. § 62-600.200(25), F.A.C.

Effluent - "Effluent", unless specifically stated otherwise, means water that is not reused after flowing out of any wastewater treatment facility or other works used for the purpose of treating, stabilizing, or holding wastes. § 62-600.200(27), F.A.C.

Effluent Limitation - "Effluent limitation" means any restriction established by the Department on quantities, rates, or concentrations of chemical, physical, biological, or other constituents which are discharged from sources into waters of the State. § 62-600.200(28), F.A.C.

Holding Pond - "Holding pond" means a storage tank or artificial impoundment or pond constructed above, on, below, or partly below the ground surface that is designed and maintained to store a specific volume of fluid and minimize fluid losses other than those primarily occurring by evaporation; generally, holding ponds are not intended to provide a mechanism for pollutant reduction. When used in conjunction with rapid-rate land application systems or other systems described in Chapter 62-610, F.A.C., holding ponds can also provide a mechanism to accomplish nitrogen reduction. § 62-600.200(36), F.A.C.

Loading Capacity - "Loading capacity" is the greatest amount of a pollutant loading (in terms of mass per time or mass per volume) that a water body can receive without violating water quality standards. Such loading shall be established at a level necessary to implement the applicable water quality standards with a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality. § 62-600.200(40), F.A.C.

Nitrate - "Nitrate (NO₃)" means the nitrogen content present in water or wastewater attributable to the nitrate (NO₃) ion and expressed as elemental nitrogen, N, as determined using approved methods. § 62-600.200(53), F.A.C.

Nitrite - "Nitrite (NO₂)" means the nitrogen content present in water or wastewater attributable to the nitrite (NO₂) ion and expressed as elemental nitrogen, N, as determined using approved methods. § 62-600.200(54), F.A.C.

Total Ammonia - "Total ammonia" means the sum of nitrogen content present as un-ionized ammonia (NH₃) and the nitrogen content present as ammonium (NH₄⁺) and expressed as elemental nitrogen, N, as determined using approved methods. § 62-600.200(77), F.A.C.

Land Application - "Land application" means the reuse of reclaimed water or the disposal of effluent on, above, or into the surface of the ground through spray irrigation, other irrigation techniques, rapid-rate systems, absorption fields, overland flow systems, or other methods. § 62-600.200(39), F.A.C.

Ocean Outfall - "Ocean outfall" means the outlet or structure through which effluent is finally discharged to the marine environment which includes the territorial sea, contiguous zone and the ocean. § 62-600.200(55), F.A.C.

Outfall - "Outfall" means the outlet or structure through which effluent is finally discharged to receiving water. § 62-600.200(58), F.A.C.

Percolation Pond - "Percolation pond" means an artificial impoundment similar to a holding pond for which the design and operation provides for fluid losses through percolation/seepage in addition to evaporative losses. § 62-610.200(38), F.A.C.

Pollution - "Pollution" means the presence in the outdoor atmosphere or waters of the state of any substances, contaminants, noise, or man-made or man-induced alteration of the chemical, physical, biological, or radiological integrity of air or water in quantities or levels which are or may be potentially harmful or injurious to human health or welfare, animal or plant life, or property, including outdoor recreation. § 62-600.200(65), F.A.C.

Reclaimed Water - "Reclaimed water" means water that has received at least secondary treatment and is reused after flowing out of a wastewater treatment facility. § 62-600.200(67), F.A.C.

Residuals - "Residuals" or "domestic wastewater residuals" means the solid, semisolid, or liquid residue generated during the treatment of domestic wastewater in a domestic wastewater treatment facility. Not included is the treated effluent or reclaimed water from a domestic wastewater treatment plant. Also not included are solids removed from pump stations and lift stations, screenings and grit removed from the preliminary treatment components of domestic wastewater treatment facilities, other solids as defined in Rule 62-640.200(24), F.A.C., and ash generated during the incineration of residuals. § 62-640.200(31), F.A.C.

Reuse - "Reuse" means the deliberate application of reclaimed water, in compliance with Department and District rules, for a beneficial purpose. § 62-600.200(68), F.A.C.

(a) Where appropriate, said uses may encompass:

1. Landscape irrigation (such as irrigation of golf courses, cemeteries, highway medians, parks, playgrounds, school yards, retail nurseries and residential properties);
2. Agricultural irrigation (such as irrigation of food, fiber, fodder and seed crops, wholesale nurseries, sod farms, and pastures);
3. Aesthetic uses (such as decorative ponds and fountains);
4. Ground water recharge (such as slow-rate, rapid-rate, and absorption field land application systems) but not including disposal methods described in paragraph (b), below;
5. Industrial uses (such as cooling water, process water, and wash waters);
6. Environmental enhancement of surface waters resulting from discharge of reclaimed water having received at least advanced wastewater treatment or from discharge of reclaimed water for wetlands restoration;
7. Fire protection; or
8. Other useful purpose.

(b) Overland flow land application systems, rapid-rate land application systems providing continuous loading to a single percolation cell, other land application systems involving less than secondary treatment prior to application, septic tanks, and ground water disposal systems using Class I wells injecting effluent or wastes into Class G-IV waters shall be excluded from the definition of reuse.

Secondary Treatment - "Secondary Treatment" means treatment of Domestic Wastewater to achieve an effluent after disinfection containing not more than 20 mg/L CBOD5 and 20 mg/L TSS, or 90% removal of each of these pollutants from the wastewater influent, whichever is more stringent. These facilities shall be subject to provisions of Rule 62-600.110, F.A.C., regarding the applicability of the above requirements, and Rules 62-600.440, 62-600.445 and 62-600.740, F.A.C., regarding compliance with these requirements. Appropriate disinfection and pH control of effluents is also required. § 62-600.200(69), F.A.C.

Treatment - "Treatment" means any method, technique, or process which changes the physical, chemical, or biological character or composition of wastewater and thereby reduces its potential for polluting waters of the state. § 62-600.200(85), F.A.C.

Total Kjeldahl Nitrogen - "Total Kjeldahl nitrogen (TKN)" means the sum of free ammonia and organic nitrogen compounds in water or wastewater and expressed as elemental nitrogen, N, as determined using approved methods. § 62-600.200(80), F.A.C.

Total Nitrogen - "Total nitrogen (TN)" means the total content of the nitrogen species of organic nitrogen, ammonia, nitrate and nitrite present in water or wastewater and expressed as elemental nitrogen, N, as determined using approved methods. § 62-600.200(81), F.A.C.

Total Phosphorus - "Total phosphorus (TP)" means the total phosphate content of water or wastewater including all of the orthophosphates and condensed phosphates, both soluble and insoluble, and organic and inorganic species and expressed as elemental phosphorus, P, as determined using approved methods. § 62-600.200(83), F.A.C.

Underground injection - "Underground injection" means effluent disposal or reuse by well injection into underground geologic formations. § 62-600.200(91), F.A.C.

Wastewater treatment facility - "Wastewater facility" or "facility" means any facility which discharges wastes into waters of the State or which can reasonably be expected to be a source of water pollution and includes any or all of the following: the collection and transmission system, the wastewater treatment works, the reuse or disposal system, and the residuals management facility. § 62-600.200(96), F.A.C.

Water Quality-Based Effluent Limitations (WQBELs). - "Water Quality-Based Effluent Limitations (WQBELs)" means an effluent limitation, which may be more stringent than a technology-based effluent limitation, that has been determined necessary by the Department to ensure that water quality standards in a receiving body of water will not be violated. § 62-600.200(99), F.A.C.

SECTION 3: RECOMMENDATIONS RELATING TO REDUCTION OF NUTRIENT LEVELS AND VOLUME OF THE DISCHARGE OF TREATED EFFLUENT TO OPEN WATERS.

Existing Standards for surface water disposal (excluding ocean outfalls) provides that all domestic wastewater facilities are required, at a minimum, to provide Secondary Treatment of wastewater. New facilities and modifications of existing facilities shall be designed to achieve an effluent after disinfection containing not more than 20 mg/L CBOD5 and 20 mg/L TSS, or 90% removal of each of these pollutants from the wastewater influent, whichever is more stringent. All facilities shall be operated to achieve, at a minimum, the specified effluent limitations (20 mg/L). All facilities shall be subject to provisions of Rule 62-600.110, F.A.C., regarding the applicability of the above requirements, and Rules 62-600.440, 62-600.445 and 62-600.740, F.A.C., regarding compliance with these requirements. Appropriate disinfection and pH control of effluents shall also be required.

Existing Standards for surface water disposal via ocean outfall discharging to Class III coastal waters shall meet, at a minimum, the appropriate secondary treatment criteria contained in paragraph 62-600.420(1)(a), F.A.C. Appropriate disinfection and pH control of the effluents shall also be required. Discharges to coastal waters are subject to the applicable limitations of Rule 62-600.520, F.A.C. All domestic wastewater treatment plants discharging to open ocean waters are required, at a minimum, to provide secondary treatment as defined herein. New treatment plants and modifications of existing plants shall be designed to achieve an effluent prior to discharge containing not more than 30 mg/L CBOD5 and 30 mg/L TSS, or 85% removal of these pollutants from the wastewater influent, whichever is more stringent. All facilities, whether new or existing, shall be operated to achieve, at a minimum, the specified effluent limitations (30 mg/L) and shall be subject to the provisions of Rules 62-600.440, 62-600.445 and 62-600.740, F.A.C., regarding compliance with these requirements. Appropriate disinfection and pH control of the effluents shall also be required. Deviations from the minimum treatment

requirements for all facilities, whether new or existing, discharging to open ocean waters shall only be approved pursuant to subsection 62-600.520(5), F.A.C.

The design of new facilities and modification of existing facilities to achieve pollutant reduction to levels beyond that specified by secondary treatment shall be required before discharge to Class I waters. Class I reliability, as described in paragraph 62-600.300(4) (l), F.A.C., shall be provided. The Department shall approve other methods of providing facility reliability (as provided by paragraph 62-600.400(1)(b), F.A.C.) if the permittee provides reasonable assurances in the preliminary design report that the level of reliability provided is equivalent to the class of reliability required. Treatment shall be provided such that reclaimed water or effluent limitations are met after disinfection (however, reasonable assurances shall be provided that the TSS limitation required to achieve high-level disinfection as specified in paragraph 62-600.440(5)(e), F.A.C., shall be achieved before disinfection regardless of the actual reclaimed water or effluent compliance monitoring location).

RECOMMENDATIONS

- A. The amount of direct discharge to surface waters should be reduced to the minimum by distributing the effluent into reuse and storage applications.
- B. The target goal effluent discharge standards for southwest Florida rivers and streams shall be 2.5 mg/l Biochemical Oxygen Demand (BOD), 1 mg/l of Total Suspended Solids (TSS), 0.9 mg/l Total Nitrogen, and 0.04 mg/l Total Phosphorus.
- C. The target goal effluent discharge standards for southwest Florida lakes and reservoirs shall be 2.5 mg/l Biochemical Oxygen Demand (BOD), 1 mg/l of Total Suspended Solids (TSS), 1.27 mg/l Total Nitrogen, and 0.02 mg/l Total Phosphorus.
- D. The target goal effluent discharge standards for southwest Florida estuaries shall be 1.1 mg/l Biochemical Oxygen Demand (BOD), 1 mg/l of Total Suspended Solids (TSS), 0.53 mg/l Total Nitrogen, and 0.05 mg/l Total Phosphorus.
- E. Existing domestic wastewater facilities should plan to upgrade to Advanced Wastewater Treatment (AWT), or WQBEL limits, whichever is more stringent. This would include all responsible entities seeking funding to improve existing or build new AWT domestic wastewater facilities.
- F. All municipal wastewater treatment facilities shall convert to Advanced Wastewater Treatment (AWT) by their next permit renewal cycle.

SECTION 4: RECOMMENDATIONS RELATING TO THE DISCHARGE OF TREATED EFFLUENT TO GROUND WATER AQUIFERS.

Existing Standards for ground water discharge (excluding underground injection) include the secondary treatment criteria specified in paragraph 62-600.420(1) (a), F.A.C., at a minimum, generally are applicable as preapplication waste treatment requirements for all facilities, whether new or existing. The design for more stringent levels of treatment may be required by the Department as a result of the method of reclaimed water reuse or effluent application/distribution; the extent of intended public access; the characteristics of the potential receiving surface waters (i.e., where overland flow runoff or application site under drainage is involved); or ground water protection pursuant to reuse and effluent disposal provisions of Rule 62-600.530, F.A.C.

Under the restricted conditions stipulated in applicable portions of Chapter 62-610, F.A.C., for overland flow and certain under drained slow-rate land application systems, preapplication concentrations of CBOD5 and TSS in the effluent prior to discharge onto application sites are not required to be in conformance with the secondary treatment standard specified above. However, the secondary treatment standard, at a minimum, shall be met prior to final effluent release to surface waters via facilities designed for operational control of effluent.

The secondary treatment criteria specified in paragraph 62-600.420(1) (a), F.A.C., at a minimum, shall apply to all facilities utilizing Class I wells injecting domestic effluent into Class G-IV waters. Deviations from the minimum treatment requirements for such facilities may only be approved pursuant to subsection 62-600.540(5), F.A.C.

The design of new facilities and modifications of existing facilities to achieve pollutant reduction to levels beyond that specified by secondary treatment shall be required for reclaimed water or effluents discharged from Class V wells into Class G-II waters. These levels shall be as specified in subsection 62-600.540(2), F.A.C.

RECOMMENDATIONS

- A. Deep well injection- Injection of domestic wastewater effluents to all new Class I Injection wells shall require reuse quality treatment.
- B. The treatment standards for discharges of treated effluent to ground water aquifers shall be 5 mg/l TSS and high level disinfection, which is 1 mg/l chlorine residual.
- C. Cooperative use of wells through interconnects should be encouraged where feasible in order to reduce the total number of wells utilized..

SECTION 5: RECOMMENDATIONS RELATING TO TREATED WASTEWATER EFFLUENT REUSE APPLICATIONS.

Existing Standards for treated wastewater effluent reuse including reclaimed water or effluent discharge shall meet water quality standards pursuant to Rule 62-600.430, F.A.C. (no mixing zone shall be allowed). Reclaimed water or effluent discharge shall receive high-level disinfection. Reclaimed water or effluent discharge shall not exceed 10 milligrams per liter TN; and Reclaimed water or effluent contains maximum pollutant levels less than those specified for community water systems in Chapter 62-550, F.A.C. These criteria shall be modified, by the Department, up to the level of the ambient receiving surface water characteristics (but in no case to exceed the levels set for Class I waters) where such characteristics exceed the levels stipulated in Chapter 62-550, F.A.C., or to reflect the characteristics of water reaching the sewer system which violate community drinking water standards prior to further contamination (if any) resulting from the introduction of domestic or industrial wastes. Enforcement of community drinking water standards shall be pursuant to Chapter 62-550, F.A.C.

The design of facilities to achieve pollutant reduction to levels beyond that specified by secondary treatment shall be required for reclaimed water or effluents discharged from land application sites (including site under drainage systems) to surface waters if necessary to maintain water quality standards for the receiving waters. These levels may be established via WQBELs (i.e., subsection 62-600.430(1) and Chapter 62-650, F.A.C.).

RECOMMENDATIONS

- A. Treatment standards for specific applications-For Public access reuse, the standards shall be 5 mg/l TSS and high level disinfection. The Standards for restricted access sites is 20mg/l TSS and basic level disinfection, which is 0.5 mg/l chlorine residual.
- B. Cooperative use of resource through interconnects should be encouraged.

SECTION 6: RECOMMENDATIONS RELATING TO PROCESSING AND DISPOSAL OF SOLIDS/SLUDGE

Must follow the requirements of Chapter 62-640, F.A.C. This rule is being revised and has been under review for over two years.

RECOMMENDATIONS

- A. **Use of Solids and Sludge** Sludge shall be applied only to Agriculture Enterprises in which an immediate and calculated benefit is provided. All solids and sludge not specifically used for immediate agricultural benefits shall be processed and treated for use as fertilizer/soil amendment or for a fuel source.


- B. **Timing of Application** No Applicator shall apply Solids/Sludge during the "rainy season" (defined as June 1 through October 31 of each calendar year).
- C. **Total Yearly Applications** Solids/Sludge shall not be applied more than one (1) time during any one calendar year to a single area
- D. **Impervious surface** Solids/Sludge shall not be applied, spilled, or otherwise deposited on any impervious surfaces. Any Solids/Sludge applied, spilled, or deposited, either intentionally or accidentally, on any impervious surface shall be immediately and completely removed. Solids/Sludge released on an impervious surface must be immediately contained and either legally applied to a legal site, or returned to the original site.
- E. **Buffer Zones** No Solids/Sludge shall be applied in, on, or located closer than 1,000 feet to any Class I water body, Outstanding Florida Water or Outstanding National Resource Water, or 200 feet from any other surface water of the state as defined in s. 403.031, F.S., including ponds, streams, water courses, lakes, retention areas, drainage ditches or canals, or in any designated wetland or any wetland as defined by the Florida Department of Environmental Protection (Chapter 62-340, F.A.C. defines Florida Wetland as "Those areas that are inundated or saturated by surface water or ground water at a frequency and a duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils").

PASSED AND DULY ADOPTED BY THE SOUTHWEST FLORIDA REGIONAL PLANNING COUNCIL this 17th day of May, 2007.

SOUTHWEST FLORIDA REGIONAL PLANNING COUNCIL




James Coletta, Chairman


David Burr, Executive Director