

2018 LOCAL LIMITS RE-EVALUATION FOR SOUTH CROSS BAYOU ADVANCED WATER RECLAMATION FACILITY AND WILLIAM E. DUNN WATER RECLAMATION FACILITY

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PRESENTED TO

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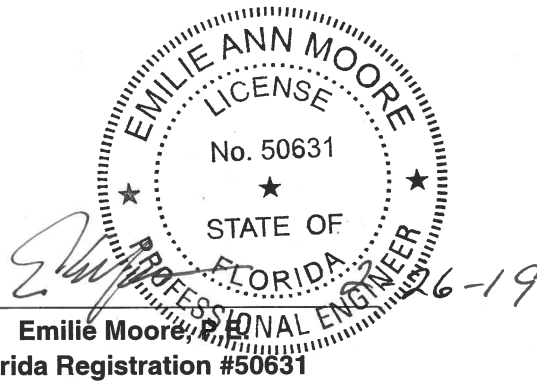
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Pinellas County

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EXECUTIVE SUMMARY

Pinellas County (County) recently received a renewed National Pollutant Discharge Elimination System (NPDES) Permit for the South Cross Bayou Advanced Water Reclamation Facility (SCB). As a condition of the permit, the local limits were to be reviewed and revised, as appropriate. The County also has local limits that apply to the William E. Dunn Water Reclamation Facility (WED). Separate local limits are applied at each facility and were last re-evaluated in 2013. The County contracted with Tetra Tech, Inc. to re-evaluate the local limits at the SCB and WED.

Tetra Tech, Inc. prepared a Plan of Study that identified the pollutants with existing local limits and added Alpha-Endosulfan, Oil and Grease, Styrene, Total Nitrogen, and Total Phosphorus for review as part of this re-evaluation. The Plan of Study was accepted by the Florida Department of Environmental Protection (FDEP) per the FDEP's letter dated July 6, 2018.

South Cross Bayou Advanced Water Reclamation Facility (SCB)

Samples were collected from October 17, 2018 through October 25, 2018 at the SCB. The influent sampling location included the pelletizer return stream. Therefore, the pelletizer return stream was also sampled so that true influent could be calculated. The effluent sample was delayed by 24 hours from the influent sample to account for the hydraulic retention time. The background sampling locations were PS-101 and PS-180 in the collection system.

Criteria used to calculate local limits included NPDES limit pass-through, re-use standards, Class III Marine standards, Class AA biosolids quality, inhibition of secondary treatment, and inhibition of sludge digestion.

Calculations were performed using the annual average flow from August 2017 to July 2018 of 23.08 million gallons per day (MGD). The Significant Industrial User (SIU) flow of 0.313 MGD included a 5 percent allowance for growth. A headworks safety factor of 10 percent was applied when site-specific data for a pollutant was available. The Uniform Allocation Method (UAM) was used to distribute the calculated loadings to the SIUs.

The proposed local limits are summarized in Table ES-1. The existing limits are proposed to be retained, except for silver. The calculated local limits for oil and grease and total phosphorus are sufficiently high and it is unlikely that any SIU is discharging near these levels. Therefore, no local limit is proposed for oil and grease and total phosphorus at this time. The County plans to evaluate the need for a Total Nitrogen limit, as the pollutant is not currently monitored by SIUs. In addition, the County is planning to make improvements to the denitrification filters at the SCB, which could influence a future Total Nitrogen limit. The County plans to test existing SIUs for Total Nitrogen and determine if there is a need for a limit and what the compliance implications on SIUs might be. Upon conclusion of the testing and implementation of the proposed denitrification filter improvements, the County will determine whether the Total Nitrogen limit needs to be implemented.

The influent and effluent values for cyanide and mercury were all below detection. This did not allow site specific removals to be calculated. It also indicates that there is not a significant amount of cyanide or mercury entering or leaving the SCB. In addition, the SCB has not experienced any operating problems related to cyanide or mercury. Therefore, the local limits for cyanide and mercury are proposed to remain the current local limits of 1.0 mg/L and 0.062 mg/L, respectively.

Table ES-1. Proposed Local Limits for South Cross Bayou AWRF

Pollutant	Sample Type	Existing Daily Maximum, mg/L	Proposed Daily Maximum, mg/L
Arsenic	Composite	0.1	0.1
5-day Biochemical Oxygen Demand (BOD ₅)	Composite	5,000	5,000
Cadmium	Composite	0.14	0.14
Chromium	Composite	2.6	2.6
Copper	Composite	1.0	1.0
Cyanide	Grab	1.0	1.0
Lead	Composite	0.6	0.6
Mercury	Composite / Grab ^a	0.062	0.062
Molybdenum	Composite	0.16	0.16
Nickel	Composite	1.0	1.0
Oil and Grease	Grab	NA	--
Selenium	Composite	0.35	0.35
Silver	Composite	2.0	1.6
Styrene	Grab	NA	--
Total Nitrogen (TKN, NO ₂ ⁻ , NO ₃ ⁻)	Composite	NA	--
Total Phenols	Grab	5.0	5.0
Total Phosphorus	Composite	NA	--
Total Suspended Solids	Composite	5,000	5,000
Zinc	Composite	2.0	2.0

Notes: ^a Composite samples were used for samples analyzed using EPA Method 245.1. The SCB effluent was collected as a grab sample and analyzed using EPA Method 1631.

William E. Dunn Water Reclamation Facility (WED)

Sample collection for the WED evaluation was performed from October 3, 2018 through October 13, 2018. Sampling locations included the WED influent and effluent, as well as two collection system sampling locations at Pump Stations (PS) 321 and 326. A 50-hour delay between the influent and effluent samples was employed to account for the hydraulic retention time through WED. The samples were analyzed by either the Pinellas County Utilities Laboratory or Pace Analytical. Sampling locations included the WED influent and effluent. Samples were also collected from PS-321 and PS-326, which represent the background locations within the collection system.

Criteria used to calculate local limits included NPDES limit pass-through, re-use standards, Class AA biosolids quality, inhibition of secondary treatment, and inhibition of sludge digestion.

Calculations were performed using the annual average flow from August 2017 to July 2018 of 8.05 MGD. The SIU flow of 0.0305 MGD included a 5 percent allowance for growth. A headworks safety factor of 10 percent was applied when site-specific data for a pollutant was available. The Uniform Allocation Method (UAM) was used to distribute the calculated loadings to the SIUs.

The proposed local limits are summarized in Table ES-2. The existing limits are proposed to be retained. Local limits are not proposed for Oil and Grease, Total Nitrogen, or Total Phosphorus. The high concentrations calculated do not require that the SIUs are limited for these pollutants.

Table ES-2. Proposed Local Limits for William E. Dunn WRF

Pollutant	Sample Type	Existing Daily Maximum, mg/L	Proposed Daily Maximum, mg/L
Arsenic	Composite	0.1	0.1
5-day Biochemical Oxygen Demand (BOD ₅)	Composite	5,000	5,000
Cadmium	Composite	0.25	0.25
Chromium	Composite	2.6	2.6
Copper	Composite	1.0	1.0
Cyanide	Grab	1.0	1.0
Lead	Composite	0.6	0.6
Mercury	Composite	0.015	0.015
Molybdenum	Composite	0.3	0.3
Nickel	Composite	2.68	2.68
Oil and Grease	Grab	NA	--
Selenium	Composite	0.62	0.62
Silver	Composite	2.0	2.0
Styrene	Grab	NA	--
Total Nitrogen (TKN, NO ₂ ⁻ , NO ₃ ⁻)	Composite	NA	--
Total Phenols	Grab	5.0	5.0
Total Phosphorus	Composite	NA	--
Total Suspended Solids	Composite	5,000	5,000
Zinc	Composite	2.0	2.0

It is recommended that the County update the local limits identified in Tables ES-1 and ES-2 upon receipt of approval from the FDEP.