

**FACT SHEET  
FOR  
STATE OF FLORIDA  
DOMESTIC WASTEWATER FACILITY PERMIT**

**1) GENERAL INFORMATION:**

PERMIT NAME: District II WRF

PERMIT NUMBER: FL0026450 – 005

LOCATION: 1840 Cedar Bay Road  
Jacksonville, Florida 32218  
Duval County  
Latitude: 30° 25' 32" N    Longitude: 81° 37' 07" W

NAME OF PERMITTEE: JEA

FACILITY CONTACT: Mr. Paul K. Steinbrecher  
Director, Permitting and Regulatory Conformance

FACILITY MAILING ADDRESS: 21 West Church Street  
Jacksonville, Florida 32202  
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PERMIT WRITER: D. Anh Vo, P.E.

PERMIT REVIEWERS: Jeff S. Martin, P.E., Wastewater Section – NED FDEP  
Domestic Wastewater Section – Tallahassee Office – FDEP

**2) SUMMARY OF APPLICATION**

a) Chronology of Application

Application Date: 03/02/2005

Additional Information: 05/16/2005, 11/26/2007, and 09/23/208 (Monthly Meeting)

b) Type of Facility

Domestic Wastewater Treatment Plant  
Publicly-owned treatment works  
Standard Industrial Classification Code: 4952

c) Facility Capacity

i) Treatment Capacity:

	Design Capacity	Permitted Capacity
<b>Existing</b>	10.00 MGD AADF	10.00 MGD AADF
<b>Proposed Increase</b>	0.00 MGD AADF	0.00 MGD AADF
<b>Proposed Total</b>	10.00 MGD AADF	10.00 MGD AADF

ii) Disposal and Reuse of Effluent:

	Surface Water Discharge		Reuse of Reclaimed Water	
	Design Capacity	Permitted Capacity	Design Capacity	Permitted Capacity
<b>Existing</b>	10.00 MGD	10.00 MGD	5.00 MGD	0.00 MGD
<b>Proposed Increase</b>	0.00 MGD	0.00 MGD	0.00 MGD	0.00 MGD
<b>Proposed Total</b>	10.00 MGD	10.00 MGD	5.00 MGD	0.00 MGD

d) Description of the Facility:

The District II WRF is located adjacent to the Broward River off of Cedar Bay Road. It is an existing 10.00 million gallon per day (MGD) annual average daily flow (AADF) wastewater treatment facility (WRF) consisting of two parallel 5.00 MGD AADF treatment trains (Plant 1 and Plant 2).

Δ Plant 1 (south plant) consists of the following process units:

- Two mechanical bar screen in parallel with a capacity of 12.5 MGD at FHF;
- Two 0.248-MG primary clarifiers with a surface area of 7,854 ft<sup>2</sup> each;
- Two 22,050-ft<sup>3</sup> (183,015-gallon) anoxic zones at the head of the train followed by two 147,000-ft<sup>3</sup> (1.256-MG) aeration zones;
- Two 0.571-MG secondary clarifiers with a surface area of 7,854-ft<sup>2</sup> each.

Δ Plant 2 (north plant) consists of the following process units:

- Two mechanical bar screen with a capacity of 12.5 MGD at PHF;
- Two primary clarifiers with a surface area of 3,318 square feet each. One may be used as a sludge thickener.
- Two 15,100-ft<sup>3</sup> (125,934-gallon) anoxic zones at the head of the train followed by two 201,344-ft<sup>3</sup> (1.679-MG) aeration zones;
- Two 0.8225-MG secondary clarifiers with a surface area of 6,362 square feet each.

The clarifiers supernatant of the two plants is combined and conveyed to two rotary disk filters, each with 12 cloth media disks to provide tertiary treatment and then to an ultraviolet (UV) disinfection system which consist of two equivalent trains; each train has two banks each consisting of five modules with four lamps each.

The final effluent is discharged to the St. Johns River to the southwest of Drummond Point. This reach of the river is the area from the mouth of the Trout River to Dames Point.

e) Description of Effluent: (as reported by the applicant)

i) Surface Water Discharge:

See attached map for the location of effluent disposal.

(1) Outfall Serial Number D-001 (St. Johns River – Class III Predominated Marine Water – WBID 2213C)

Annual Average Daily Flow (MGD): 4.70 (2007)

pH Range (Standard Units): 7.5 – 8.2

☐ Effluent Testing Information. (Items 12 and 13, pages 13 and 14):

Parameters	Reported Data	
	Maximum Daily Discharge	Average Daily Discharge
Flow (MGD)	8.79	3.90
pH (s.u.)	7.50	8.20
Fecal Coliform (no./100 ml)	17.0	7.6
CBOD5 (mg/L)	42.0	2.9
Total Kjeldahl Nitrogen (mg/L)	20.4	2.7
Total Nitrogen as N (mg/L)	42.0	18.8
Nitrate plus Nitrite (mg/L)	39.4	16.7
Ammonia as N	18.2	0.83
Phosphorous, Total (mg/L)	11.8	6.8

\* reported by the applicant in the Application Form 2A (Item 13, Section 3.A.)

☐ Results of three sets of expanded effluent testing data were provided. (Item 14, page 15, 16 and 17 of Form 2A):

Application Form 2A shows that maximum concentration of cyanide in the effluent sample was exceeded the Florida Water Quality Criterion defined by Rules 62-302.530(24), FAC. Other parameters were either in compliance with the Florida Water Quality Criteria or had concentration values, which were non-detectable with the MDLs values.

3) **FACILITY PERFORMANCE - FILE REVIEW:**

a) Compliance History of the Facility:

i) The Department record (February 2000 through June 2008) indicates that the facility has been in compliance with only one minor out-of compliance (Office File Inspection dated December 2007).

- ii) The Third-Year inspection was conducted on June 24 and 25, 2004 for the effluent discharge through Outfall D-001; the result is summarized following:

(1) Results of the Water Chemistry:

Total ammonia was not detected in the bioassay samples in the laboratory. Total ammonia concentration in the sample collected and preserved for chemical analysis was 0.04 mg/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was < 0.02 mg/L.

Aluminum, iron and nickel were detected in the effluent at levels that comply with Class III marine water quality criteria (62-302.530, F.A.C.). Atrazine, lead, and nickel were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL).

(2) Toxicity Test Result:

The effluent sample collected from D-001 was not acutely toxic to test organisms during the acute screen 96-hour bioassays.

+ Sample #4 collected October 24, 2004, 1700 hours:

*Americamysis bahia* 96-hr acute screening bioassay –  $LC_{50} > 100\%$ , 10% mortality in 100% sample at 96 hours.

*Medidia beryllina* 96-hr acute screening bioassay –  $LC_{50} > 100\%$ , 0% mortality in 100% sample at 96 hours.

+ Sample #1 collected October 24, 2004, 2300 hours:

*Americamysis bahia* - 96-hr acute screening bioassay –  $LC_{50} > 100\%$ , 0% mortality in 100% sample at 96 hours.

*Medidia beryllina* - 96-hr acute screening bioassay –  $LC_{50} > 100\%$ , 0% mortality in 100% sample at 96 hours.

+ Sample #2 collected October 25, 2004, 0500 hours:

*Americamysis bahia* - 96-hr acute screening bioassay –  $LC_{50} > 100\%$ , 5% mortality in 100% sample at 96 hours.

*Medidia beryllina* - 96-hr acute screening bioassay –  $LC_{50} > 100\%$ , 5% mortality in 100% sample at 96 hours.

+ Sample #3 collected October 25, 2004, 1120 hours:

*Americamysis bahia* - 96-hr acute screening bioassay –  $LC_{50} > 100\%$ , 5% mortality in 100% sample at 96 hours.

*Medidia beryllina* - 96-hr acute screening bioassay –  $LC_{50} > 100\%$ , 0% mortality in 100% sample at 96 hours.

(3) Algal Growth Potential:

The effluent AGP result exceeded the "problem" threshold for marine receiving waters.

The effluent Algal Growth Potential (AGP) was 195 mg dry wt/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. Raschke and Shultz (1987) found that AGP values above 5.0 mg dry weight/L represent a "problem" threshold for fresh receiving waters. The predicted AGP based on inorganic nitrogen concentrations was 77.41 ( $\pm 20\%$ ) mg dry wt/L.

The effluent salinity-adjusted Algal Growth Potential (AGP) was 114 mg dry wt/L of the saltwater species, *Dunaliella tertiolecta*. Raschke and Shultz found that AGP values above 10.0 mg dry weight/L represent a “problem” threshold for marine receiving waters, implying nutrient enrichment.

b) Effluent Characteristics:

- i) The concentration of pollutants in the discharge was reported in the discharge monitoring reported (DMR) (01/01/2003 to 07/30/2008).

**Table 1: Flow to the outfall D-001 (St. Johns River)**

Parameters  D-001	Reported Data		
	Annual Avg.	Lowest Monthly Avg.	Highest Monthly Avg.
Flow (MGD)	3.50	2.60	4.60
pH (S.U.)	-	6.50	7.70
Fecal Coliform (# / 100 mL)	2.69	2.00	7.00
CBOD5 (mg/L)	2.22	2.00	4.00
TSS (mg/L)	3.64	2.00	7.00

**Table 2: Other Pollutants**

Parameters	Monthly Value				
	Average	Median	Mode.	Max.	Min.
Ammonia (as N) (mg/L)	2.28	1.00	0.49	13.05	0.10
Total Nitrogen (as N) (mg/L)	17.54	16.99	17.15	26.17	13.09
Total Kjeldahl Nitrogen (mg/L)	4.06	2.91	2.08	14.71	1.52
Nitrate plus Nitrite (mg/L)	15.37	14.77	#N/A	25.06	9.94
Total Organic Nitrogen (as N) (mg/L)	2.50	2.20	2.17	7.01	1.46
Total Phosphorus (as P) (mg/L)	7.80	7.32	7.17	20.00	5.09
Othro-Phosphorus (as P) (mg/L)	5.24	4.84	2.39	26.78	0.57
Total Recoverable Copper (ug/L)	3.15	2.40	2.30	8.27	1.40
Percent Capacity (%)	46.62	48.00	48.00	54.00	5.20
Percent CBOD removed (%)	99.07	99.10	99.00	99.50	98.40
Percent TSS removed (%)	98.67	98.80	98.90	99.40	97.40

ii) Summary Toxicity Testing of Effluent at D-001

The toxicity summary showed no violation of the permit condition  $LC50 < 100\%$  effluent in the facility history of semi-annual testing at D-001 during the current permit cycle. The facility has not only met the permit condition of  $LC50 > 100\%$  effluent, but the effluent samples have historically caused little to no mortality at all test concentrations for either species tested.

c) Receiving Water Characteristics

The final treated effluent from the WRF is discharged to the St. Johns River on the Lower St. Johns River Basin (Class III – Predominately Marine Water).

**303 (d) Lists Impaired Water:**

Basin	St. Johns River Above Intracoastal Waterway (Basin East/Downstream of Outfall)		St. Johns River Above Dames Point (Basin Immediate Outfall)		St. Johns River Above Trout River (Basin West/Upstream of Outfall)	
WBID	2213B		2213C		2213D	
303(d) List	EPA 303(d)*	FDEP 303(d)**	EPA 303(d)*	FDEP 303(d)**	EPA 303(d)*	FDEP 303(d)**
Impaired Parameter	Coliforms, Turbidity & Total Suspended Solids	Copper, Iron, Lead & Nickel	Nutrients, Turbidity & Total Suspended Solids	Copper, Iron, & Nickel	Coliforms, Nutrients & Total Suspended Solids	Copper, Iron, & Nickel

\* EPA 303 (d) List (June 11, 2003 Version)

\*\* FDEP 303 (d) List (Secretarial Order dated May 27, 2004)

The TMDL for the LSJR was adopted by the Department on June 3, 2008, and the Lower St. Johns River Basin Management Action Plan (BMAP) adopted on October 10, 2008.

**4) BRIEF DISCUSSION OF CHANGES TO PERMIT LIMITATIONS**

- The discharge has to meet the TMDL for total nitrogen; therefore, the annual total mass load of TN is added to the permit. However, the TMDL – WLA total nitrogen for the facility is address under the JEA - Aggregated Total Nitrogen (Permit ID: FL0620564).
- The whole effluent toxicity (WET) test is changed from acute and marine water test species to chronic and fresh water test species in accordance with Rule 62-620.620(3)(b) and (3)(g)2.d, FAC.
- The facility is required to monitor for total cyanide.
- Concentration of copper shall meet the limit of 3.7 µg/L as required by Rule 62-610.530(24), FAC.

**5) BASIS FOR EFFLUENT AND RECLAIMED WATER LIMITS AND MONITORING REQUIREMENTS (INCLUDING EFFLUENT MONITORING REQUIREMENTS)**

**a) Surface Water Disposal (D-001)**

(1) Basis for Effluent and Monitoring Requirements - Outfall D-001(Class III- Marine water):

The following table provides the basis for **Part I. A.1 and I.A.2** provisions.

Parameter	Limit	Basis	Rationale
Flow, from outfall D-001 to St. Johns River	10.0 Report	Annual Average Monthly Average	62-600.400(3)(b) FAC
BOD, Carbonaceous 5-day, 20°C (mg/l) TBEL-Secondary Treatment	20.0 30.0 45.0 60.0	Annual Average Monthly Average Weekly Average Single Sample Max.	62-600.420(2) or 430 or 510 FAC, 62-650 FAC & /or 62-600.740(1)(b)2.a. FAC 62-600.420(2) or 430 or 510 FAC, 62-650 FAC &/or 62-600.740(1)(b)2.b. FAC 62-600.740(1)(b)2.c. FAC 62-600.740(1)(b)2.d. FAC
Solids, Total Suspended (mg/l), Prior to placing the Expansion into service TBEL-Secondary Treatment	20.0 30.0 45.0 60.0	Annual Average Monthly Average Weekly Average Single Sample Max.	62-600.420(2) or 430 or 510 FAC, 62-650 FAC & 62-600.740(1)(b)2.a. FAC 62-650 FAC 62-600.740(1)(b)2.c. FAC 62-600.740(1)(b)2.d. FAC
Percent Removal, CBOD <sub>5</sub> TBEL-Secondary Treatment	85.0%	Monthly Average	62-620.620(1)(o) and 62-620.620 (3) FAC
Percent Removal, TSS TBEL-Secondary Treatment	85.0%	Monthly Average	62-620.620(1)(o) and 62-620.620 (3) FAC
pH (s.u.) TBEL-Secondary Treatment	6.5 to 8.5	Minimum and Maximum	62-302.530(52)
Temperature, water (°C)	Report	Maximum	32-302.530 (3), FAC
Coliform, Fecal (#/100ml) TBEL-Secondary Treatment	200 200 400 800	Annual Average Monthly Geo. Mean 90th Percentile Single Sample Max.	62-600.440(4)(c)1. FAC 62-600.440(4)(c)2. FAC 62-600.440(4)(c)3. FAC 62-600.440(4)(c)4. FAC
Ultraviolet Light Dosage, (mW-s/cm <sup>2</sup> )	Report	Minimum	62-600.440 FAC & 62-302.530(19) FAC
Ultraviolet Light Transmittance (%)	Report	Minimum	62-600.440 FAC & 62-302.530(19) FAC
Ultraviolet Light Intensity (MW/cm <sup>2</sup> )	Report	Single Sample Max.	62-600.440 FAC & 62-302.530(19) FAC

Nitrogen, Total (as N) (WQBEL) (mg/l) TMDL -TN	Report Report Report	Annual Average Monthly Average Weekly Average Single Sample Max.	62-600.430(1) & 62- 600.740(1)(b)2.a. FAC 62-600.740(1)(b)2.b. FAC 62-600.740(1)(b)2.c. FAC 62-600.740(1)(b)2.d. FAC
Total Ammonia (NH <sub>3</sub> +NH <sub>4</sub> ), as N	Report	Single Sample	
Total Nitrogen as N TMDL – TN (Lb/yr or Lb/month)	Report Report Report	Annual Total Monthly Total Weekly Total	TMDL – Lower St. Johns River
Phosphorus, Total (as P) (mg/L)	Report Report Report	Annual Average Monthly Average Weekly Average Single Sample Max.	62-600.740(1)(b)2.a. FAC 62-600.740(1)(b)2.b. FAC 62-600.740(1)(b)2.c. FAC 62-600.740(1)(b)2.d. FAC
Oxygen, Dissolved (DO), mg/L	4.0	Annual Average Min.	62.302.530(31) FAC, Class III, Fresh Water
Total Recoverable copper, µg/L	3.7	Single Sample Max	62-302.530(24), FAC
Total Cyanide , µg/L	1.0	Single Sample Max	62-302.530(24), FAC
Chronic Whole Effluent Toxicity	100	Single Sample Min.	62-302.200(4), 62-302.530(61), 62- 4.241, and 62-620.620(3), FAC
Nutrient Monitoring (mg/L)	Report	Single Sample Max	62-302.530(48), FAC
Stream Monitoring (mg/L)	Report	Single Sample Max	62-4.240(3)(c), FAC

(2) Discussion on the limitations:

The limits in this permit are based in part on information received in the application, the wastewater characterization reported on the DMR, the results of Third-Year inspection and the receiving water body characterization. The limits necessary to meet the rules and regulations of the Code of Federal Regulations (CFR) 40 and State of Florida were determined and included in this permit.

**(a) Technology-Based Effluent Limitations (TBELs)**

The District II WRF, a municipal wastewater treatment facility, is a category of discharger for which technology-based effluent limits have been promulgated by federal and state regulations. These regulations are performance standards that constitute all known available and reasonable assurance of prevention, control, and treatment for municipal wastewater.

The limitations and conditions of the CBOD<sub>5</sub>, TSS, and pH have been developed to comply with the technology-based standards of the Clean Water Act.

**(b) Water Quality Based Effluent Limitation (WQBEL)**

- (i) **Dissolved Oxygen:** The STORET data shows that average dissolved oxygen (DO) concentrations of the water body complies with the water quality criterion. The facility is required monitor the DO level in the effluent in accordance with Rule 62-302.530(30), FAC
- (ii) **Cyanide:** The Expanded Effluent Testing Data shows that the maximum concentration of total cyanide was 4.00 µg/L. These values were exceeded the Florida Water Quality Criteria for total cyanide. Pursuant with Section 403.088(2)(d), F.S., and Rule 62-620.320(1), F.A.C, to provide a reasonable assurance of the permit, the permittee is required to monitor total cyanide. Limits and monitoring frequencies of the parameters are based on Rules 62-302.530(24) and 62-601, FAC.



The monitoring requirements and limitation of total cyanide is new and more stringent than the previous permit requirements. Therefore, in accordance with Sections 403.088(2)(e) and (f) of the FS, the permit shall be issued, accompanied by an administrative order which contains interim limits and establishes a schedule for achieving compliance with the final limits for the two parameters

- (iii) **Enterococci:** The Environmental Protection Agency (EPA) promulgated water quality criteria for enterococci for coastal recreation waters in Florida effective December 16, 2004. However, the JEA District II WRF discharges to WBID 2213E which is more than 12 miles away from coastal recreation waters of the U.S. therefore, the JEA District II WRF is not required to monitor for enterococci in the effluent discharged from Outfall D-001. Therefore, enterococci limits and monitoring are not required.

**(iv) Monitor requirements to protect waterbody in the 303(d) List:**

303 (d) Lists Impaired Water:

Basin	St. Johns River Above Intracoastal Waterway (Basin East/Downstream of Outfall)		St. Johns River Above Dames Point (Basin Immediate Outfall)		St. Johns River Above Trout River (Basin West/Upstream of Outfall)	
WBID	2213B		2213C		2213D	
303(d) List	EPA 303(d)*	FDEP 303(d)**	EPA 303(d)*	FDEP 303(d)**	EPA 303(d)*	FDEP 303(d)**
Impaired Parameter	Coliforms, Turbidity & Total Suspended Solids	Copper, Iron, Lead & Nickel	Nutrients, Turbidity & Total Suspended Solids	Copper, Iron, & Nickel	Coliforms, Nutrients & Total Suspended Solids	Copper, Iron, & Nickel

1. Nickel: Nickel is one of the parameters listed on 303(d) List of the water body segments: WBID 2213C (outfall location), WBID 2213B (upstream of the outfall location), and WBID 2213D (downstream of the outfall location). However, results of the expanded effluent testing showed that the average and maximum concentrations of nickel (3.9µg /L and 3.4µg /L, respectively) were at levels that complied with the water quality standard (maximum 8.3µg /L). The chemical data included in third year sampling inspection report showed that nickel was detected between the laboratory MDL and practical quantitation limit (concentration reported was 4 I µg /L). There is no evidence to show that the effluent is impacting the nickel level of the water bodies. The facility will not be required to monitor for nickel at this time.
2. Iron: Iron is an impaired parameter of the three segments of the river: WBID 2213C (outfall location), WBID 2213B (upstream of the outfall location), and WBID 2213D (downstream of the outfall location). However, the chemical data included in the third year sampling inspection report showed that the concentration of iron (155µg/L) was at a level that complied with the water quality standard (maximum 300 µg/L). In addition, the facility receives 100% domestic wastewater (there are no known industrial wastewater connections to the facility). There is no evidence to show that the iron concentration in the effluent is impacting the iron level of the water body. The facility will not be required to monitor for iron at this time.
3. Copper: The chemical data included in the third year sampling inspection report showed that the effluent copper concentration (2.2 µg/L) was not detected at MDL of 2.2 µg/L (it

was reported at 2.2 U µg/L) which was below the Class III marine criterion for copper. A review, however, of the expanded effluent testing data showed that the average and maximum concentrations of copper (4.1 µg /L and 4.2 µg /L, respectively) were at levels that exceeded the Class III marine criterion for copper (3.7 µg /L); however, the maximum concentration reported was less than the permit limit (8.91 µg/L, 62-302.530(52) FAC, mixing zone). Due to the fact that all three segments of the river: WBID 2213C (outfall location), WBID 2213B (upstream of the outfall location), and WBID 2213D (downstream of the outfall location) has listed impaired for copper, the existing mixing zone for copper is no longer acceptable.

Realizing the discharge is necessary and based on the fact that the permittee needs time to collect samples, conduct a study, and evaluate and consider options for meeting the surface water quality standard for total copper at the point of discharge, an administrative order will be issued in conjunction with the permit to allow time for the facility to conduct, evaluate and consider options to bring total copper back to compliance with Department rules. The interim limit for copper will be 8.91 µg/L, which is the limit previously established under the mixing zone study.

4. Lead: Lead is listed for impaired parameter of the upstream water body segment (WBID 2213B). Expanded Effluent Testing Data shows that the maximum concentrations of lead was 0.61 µg/L. in addition, result of the Department third year sampling inspection show that concentration of lead in the effluent sample was 0.18 µg/L. Both results indicated that concentration of lead in the effluent was below the water quality criterion for lead. In addition, the facility receives 100% domestic wastewater (there are no known industrial wastewater connections to the facility). There is no evidence to show that the lead concentration in the effluent is impacting the lead level of the water body upstream of the outfall. The facility will not be required to monitor for iron at this time.
5. Nutrients: Concern of nutrients enrichment from the discharge is addressed by the Lower St. Johns River Basin Management Action Plan (BMAP) adopted on November 24, 2008.
6. Total Suspend Solids: Data (108 sample events) reported in the DMRs of the last five year (From 01/01/2003 to 12/31/2008) show that the maximum, average, mode of the monthly average concentrations of TSS, respectively, were 8.0 mg/L, 3.0 mg/L and 3.7 mg/L; and the maximum, average, and mode of the annual average concentrations of TSS were 6.8 mg/L, 4.1 and 3.3 mg/L, respectively. The reports also show that the percent removal of TSS of the facility were at an average of 97.9% and a minimum of 96.3%.

There is no evidence to show that the discharge has contributed or will enrich the total suspended solids levels of the segment of the river. Therefore, the monitoring frequency and limit for TSS is retained as the previous requirement (secondary treatment level). In addition, the new permit requests lower limit concentration for TSS in order to offset the expansion.

7. Coliforms: Results of effluent samples show average, mode and maximum of annual average of the fecal coliform were 3.3 #/100 mL, 3.0 #/100 mL, and 7.0 #/100 mL, respectively. The average, mode, and maximum monthly average (Geo mean) of fecal coliform were 2.6 #/100 mL, 2.0 #/100 mL and 7 #/100 mL, respectively. There is no sign of impact of discharge to the fecal coliform level of the receiving water. Therefore, monitoring frequency and limitation for fecal coliform are retained as they were in the previous permit.
- (v) **Ambient Sampling**: The Permittee shall conduct regular monitoring of the segment of the St. Johns River for maintaining data on the impact of the discharge to the water quality of the surface water body.

(vi) **Toxicity Test:** In order to provide reasonable assurance that the discharge will not adversely affect the designated use of the receiving water, chronic whole effluent toxicity testing is required.

(vii) **Macroinvertebrate:** The Department reserves the right to request the permittee to monitor for macroinvertebrate communities near the WRF outfall for data on the impact of the discharge to the water body.

**(c) Total Maximum Daily Load of Total Nitrogen:**

FDEP's application of the EPA methodology to develop a SSAC for DO for the marine portion of the river between Julington Creek and the mouth of the river is detailed in the April 2006 report, Site Specific Alternative Dissolved Oxygen Criterion to Protect Aquatic Life in the Marine Portions of the Lower St. Johns River Technical Support Document. The SSAC for DO was adopted by the State and approved by EPA.

After the SSAC was approved by EPA, the Department worked with SJRWMD to remodel the river to determine the allowable nutrient load that would maintain dissolved oxygen levels above the levels established in the SSAC, and a revised TMDL was developed based on the results of that re-assessment. On September 30, 2007, EPA proposed a new TMDL based on the SSAC for DO in the marine portion of the Lower St. Johns River. After public review and comment, this TMDL was finalized

Discharge from District II WRF is subject to the effluent limitation for annual mass load of the total nitrogen (i.e., the sum of monthly mass loading of total for each month starting from the first day of the second month following permit issuance through the last day of the 12th month period (rolling 12 month period)) discharge to Johns River Basin (WBID 2213C). TMDL – BMAP allows total waste allocation of total nitrogen for this WRF is 40,294 kg/year (88,646.8 Lbs/yr).

The permittee, JEA, shall meet the aggregate cap through collectively managing the total nitrogen loads from each individual JEA's facilities (Arlington East WRF -FL0026441; Beacon Hills WRF - FL0026778; Buckman WRF - FL0026000; District II WRF - FL0026450; Jacksonville Heights WRF-FL0023671; Julington Creek WRF -FL0043591; Mandarin WRF- FL0023493; Monterey WRF- FL0023604; Royal Lakes WRF - FL0026751; San Jose WRF -FL0023663; San Pablo WRF-FL0024767; Southwest District WRF-FL0026468; WoodmereWRF-FL0026786; and JEA Power Plant-FL), which are listed in the JEA - Aggregated Total Nitrogen (Permit ID: FL0620564).

**(d) New specific conditions include the following:**

(i) JEA will provide an initial report concerning the integrity of the outfall and will determine and propose an evaluation and analysis method. The initial report will be submitted to DEP within one year from permit issuance. Then, annual reports will be submitted to indicate the status of the outfall line.

(ii) JEA will provide a back-up power load evaluation, as new units are placed on-line in order to determine and demonstrate that full backup power is adequate and available.

(iii) JEA will review reuse of reclaimed water and capacity analysis for this facility. JEA will provide an annual report for reuse of reclaimed water, capacity analysis and review flow diversion impacts to reclaimed water distribution and on collection/transmission systems.

**(d) Conclusion:**

The review included in-stream monitoring data, discharge monitoring reports, the Department's year 2000 305(b) report, EPA 303(d) report, and the Department's compliance sampling inspection reports. A TMDL - Nutrients for this water-body have been developed; specific allocations for the

point source discharger have been established. Considering the above, reasonable assurance of compliance has been provided with the effluent limits and applicable surface water quality standards for each parameter of concern (based upon rules referenced in the tables above).

**b) Reuse of Reclaimed Water:**

i) The following table provides the basis for Part I. B. provisions.

<b>Parameter</b>	<b>Limit</b>	<b>Basis</b>	<b>Rationale</b>
Flow (mgd), to the Reuse system R-001	5.00	Annual Average	62-600.400(3)(b) FAC
BOD, Carbonaceous 5-day, 20°C (mg/L)	20.0 25.0 30.0 40.0	Annual Average Monthly Average Weekly Average Single Sample Max.	62-610.460 & 62-600.740(1)(b)1.a. FAC 62-600.740(1)(b)1.b. FAC 62-600.740(1)(b)1.c. FAC 62-600.740(1)(b)1.d. FAC
Solids, Total Suspended (mg/L)	5.0	Single Sample Max.	62-610.460(1) & 62-600.440(5)(f)3. FAC
pH (s.u.)	6.0 to 8.5	Minimum and Maximum	62-600.445 FAC
Coliform, Fecal (#/100ml)	non-det. 25	75th Percentile Single Sample Max.	62-600.440(5)(f)1. FAC 62-610.460 & 62-600.440(5)(f)2. FAC
Ultraviolet Light Dosage, (mW-s/cm <sup>2</sup> )	Report	Minimum	62-600.440 FAC & 62-302.530(19) FAC
Ultraviolet Light Transmittance (%)	Report	Minimum	62-600.440 FAC & 62-302.530(19) FAC
Ultraviolet Light Intensity (MW/cm <sup>2</sup> )	Report	Single Sample Max.	62-600.440 FAC & 62-302.530(19) FAC
Turbidity (NTU)	Report	Maximum	62-610.568(3) FAC
Giardia (CYSTS/100L)	Report	Maximum	62-610.568(11) FAC
Cryptosporidium (OOCYSTS/100L)	Report	Maximum	62-610.568(11) FAC
Primary Drinking Water Standards*	-	Maximum	62-610.560(2), 62-610.563(3), & 62-550.310 FAC
Secondary Drinking Water Standards	-	Annual Average	62-610.560(2), 62-610.563(3), 62-550.320, & 62-600.740(1)(b)2.a. FAC

ii) Discussion on the limitations:

The limitations and monitoring requirements are based on Chapter 62-610, Part III, FAC.

**c) Other Limitations and Monitoring Requirements**

i) The following table provides the basis for Part I. C provisions:

Parameter	Limit	Basis	Rationale
Flow (mgd) to the WRF	10.00 Report	Annual Average Monthly Average	62-600.400(3)(b) FAC (Final Phase)
Percent Capacity, (TMADF/Permitted Capacity) x 100 (PERCENT)	Report	Monthly Average	62-600.405(4) FAC
BOD, Carbonaceous 5-day, 20°C (mg/L)	Report	Monthly Average	62-601.300(1)FAC
Solids, Total Suspended (mg/L)	Report	Monthly Average	62-601.300(1)FAC
Monitoring Frequency and Sample Type	-	All Parameters	62-601 FAC & 62-699 FAC and/or BPJ of permit writer
Sampling Location	-	All Parameters	62-601, 62-610.412, 62-610.463(1), 62-610.568, 62-610.613 FAC and/or BPJ of permit writer

**6) RESIDUALS MANAGEMENT**

The method of residuals use or disposal by this facility is transported to Buckman RMF, or disposal in a Class I or II solid waste landfill.

**7) GROUND WATER MONITORING REQUIREMENTS**

In accordance with Rules 62-601 and 62-522, F.A.C., groundwater monitoring is not required at this time. The exemption from ground water monitoring will remain subject to revocation if subsequent effluent monitoring reveals that permit limits are not met, or if the Permittee fails to conduct monitoring as required to assess compliance.

**8) INDUSTRIAL PRETREATMENT REQUIREMENTS**

At this time, the facility is not required to develop an approved industrial pretreatment program. However, the Department reserves the right to require an approved program if future conditions warrant.

**9) ADMINISTRATIVE ORDERS (AO) AND CONSENT ORDERS (CO)**

This permit is accompanied by AO 129, effective (**Issuance Date of the Permit**) which includes a schedule of compliance. The AO is hereby incorporated by reference.

This facility does not have a consent order with the Department.

# **10) REQUESTED VARIANCES OR ALTERNATIVES TO REQUIRED STANDARDS**

No variances were requested for this facility.

# **11) COMPLIANCE SCHEDULE AND EFFECTIVE DATE OF PROPOSED EFFLUENT OR RECLAIMED WATER LIMITATIONS**

- a) This permit is issued in conjunction with Administrative Order (AO) No. 122 NE. The AO contains the requirements and schedule for compliance with total cyanide and total recoverable mercury. [62-620.320(1) and (2)] [62-4.070(3)]
- b) The Permittee shall submit either a report of progress or, in the case of specific actions days following a date identified in the above schedule of compliance, unless otherwise specified in this permit. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

# **12) DISCUSSION OF PREVIOUS PERMIT EFFLUENT OR RECLAIMED WATER LIMITATIONS.**

The NPDES wastewater permit for this facility (FL0043834), expiring on December 23, 2006 contains the following effluent or reclaimed water limits:

For Surface Water Serial Number D-001:

Parameters	Effluent or Reclaimed Water Limitations				
	Maximum/ Minimum	Annual Average	Monthly Average	Weekly Average	Single Sample
Flow (mgd)	Maximum	7.50	Report	Report	Report
CBOD5 (mg/L)	Maximum	20.0	30.0	45.0	60.0
TSS (mg/L)	Maximum	20.0	30.0	45.0	60.0
TSS % removal	Minimum	-	85.0	-	-
Total N (mg/L)	Maximum	Report			Report
Fecal Coliform (#/100 mL)	Maximum	200.0	-	-	800.0
pH std. units	Range	-	-	-	6.0 – 8.5
Total recoverable Copper (ug/L) (mixing zone)	Maximum	-	-	-	8.91
Nutrients monitoring	Maximum	Report	-	-	Report
Acute whole Effluent Toxicity (LC50 > % effluent)	Minimum	-	-	-	100.0

For Public Access Serial Number R-001:

Parameters	Effluent or Reclaimed Water Limitations				
	Maximum/ Minimum	Annual Average	Monthly Average	Weekly Average	Single Sample
Flow, MGD	Maximum	5.0		--	--
CBOD <sub>5</sub> , mg/L	Maximum	20	30	45	60
TSS, mg/L	Maximum	20	30	45	60.0
Fecal Coliform, #/100 mL	Maximum	200		--	800.0
pH, std. units	Range	6.0 to 8.5			

**13) NEW OR EXPANDED DISCHARGES TO SURFACE WATERS; ANTIDEGRADATION REQUIREMENTS**

The permitted capacity is unchanged. Therefore, this Section is not applicable to the facility.

**14) EFFECTS OF SURFACE WATER DISCHARGE ON THREATENED OR ENDANGERED SPECIES**

The Department does not anticipate adverse impacts on threatened or endangered species as a result of permit issuance.

**15) APPLICABLE RULES**

The following were used as the basis of the permit limitations/conditions:

a. FAC refers to various portions of the Florida Administrative Code.	
The effective dates of FAC Rule Chapters cited in the table are as follows:	
<u>Chapter</u>	<u>Effective Date</u>
62-4	04-02-08
62-160	12-03-08
62-302	04-02-08
62-520	12-09-96
62-522	08-27-01
62-550	09-18-07
62-600	04-13-06
62-601	12-24-96
62-602	10-15-07
62-610	11-19-07
62-620	02-17-09
62-625	01-08-97
62-640	03-30-98
62-650	12-26-96
62-699	10-15-07

- b. FS refers to various portions of the Florida Statutes
- c. CFR refers to various portions of the Code of Federal Regulations, Title 40
- d. BPJ refers to Best Professional Judgment

**16) DEPARTMENT CONTACT**

Additional information concerning the permit may be obtained during normal business hours from:

D. Anh Vo, P.E.  
Department's Northeast District Office  
7825 Baymeadows Way, Suite B-200,  
Jacksonville, FL, FL 32256 - 7590  
Telephone Number: 904-807-3300  
Fax Number: 904-448-4366

**17) THE ADMINISTRATIVE RECORD**

The administrative record including application, draft permit, fact sheet, public notice (after release), comments received and additional information is available for public inspection during normal business hours at the location specified in item 16.

**XV. PROPOSED SCHEDULE FOR PERMIT ISSUANCE**

Process Elements	Projected Date of Completion
Effective Date of the Application:	December 24, 2006
Draft Permit to Applicant and EPA for review	November 2, 2008
Begin Public Comment Period	December 2, 2008
Provide Proof of Publication	December 22, 2008
End Public Comment Period	January 2, 2009
Notice of Intent to Issue Permit	January 6, 2009
Publish Notice of Intent	January 12, 2009
Provide Proof of Publication	January 20, 2009
Final Department Action	January 30, 2008

**XVI. PROCEDURES FOR THE FORMULATION OF FINAL DECISION ON PERMIT ISSUANCE**

a. Public Comment Period

The Department of Environmental Protection proposes to issue a wastewater facility permit to this applicant subject to the aforementioned reclaimed water or effluent limitations and conditions. This decision is tentative and open to comment from the public.



Interested persons are invited to submit written comments regarding permit issuance on the draft permit limitations and conditions to the following address:

Department of Environmental Protection, Northeast District Office  
7825 Baymeadows Way, Suite 200B  
Jacksonville, FL 32256 - 7590  
Attn: D. Anh Vo

All comments received within 30 days following the date of public notice, pursuant to Rule 62-620.550, F.A.C., will be considered in the formulation of the final decision with regard to permit issuance.

Any interested person may submit written comments on the Department's proposed permitting decision or may submit a written request for a public meeting to the address specified above, in accordance with Rule 62-620.555, F.A.C. The comments or request for a public meeting must contain the information set forth below and must be received in the above named District office of the Department within 30 days of receipt or publication of the public notice. Failure to submit comments or request a public meeting within this time period will constitute a waiver of any right such person may have to submit comments or request a public meeting under Rule 62-620.555, F.A.C.

The comments or request for a public meeting shall contain the following information:

- 1) The commenter's name, address and telephone number, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
- 2) A statement of how and when notice of the draft permit was received;
- 3) A description of any changes the commenter proposes for the draft permit;
- 4) A full explanation of the factual and legal reasons for each proposed change to the draft permit; and

A request that a public meeting be scheduled (if applicable) including a statement of the nature of the issues proposed to be raised at the meeting.

b. Public Meeting

The Department will hold a public meeting if there is a significant degree of public interest in the draft permit or if it determines that useful information and data may be obtained thereby. Public notice of such a meeting shall be published by the applicant at least 30 days prior to the meeting.

If a public meeting is scheduled the public comment period is extended until the close of the public meeting. If a public meeting is held any person may submit oral or written statements and data at the meeting on the Department's proposed action.

c. Issuance of the Permit

The Department will make its decision regarding permit issuance after consideration of all written comments, including comments from the United States Environmental Protection Agency on surface water discharge aspects of the draft or a proposed permit; the requirements of Chapter 403, F.S. and appropriate rules; and, if a public meeting is held, after consideration of all comments, statements and data presented at the public meeting. The Department will respond to all significant comments in writing. The Department's response to significant comments will be included in the administrative record of the permit and will be available for public inspection at the above named District office of the Department.

Unless a request for an administrative hearing, or an extension of time to file a petition for an administrative hearing, as indicated in d. below, is granted, the Department will take final agency action by issuing the permit or denying the permit application. If an administrative hearing is convened, final agency action will be based on the outcome of the hearing.

d. Administrative Hearing

A person whose substantial interests are affected by the Department's proposed permitting decision has the opportunity to petition for an administrative proceeding (hearing) to challenge the Department's decision in accordance with Section 120.57, F.S.

An administrative hearing is an evidentiary proceeding in which evidence is presented by testimony and exhibits before an independent hearing officer. The result of an administrative hearing is the issuance of the hearing officer's recommended order to the Department, including the hearing officer's findings of fact, based on the evidence presented at the hearing. The Department will issue a final order, granting or denying the permit, based on the hearing officer's recommended order.

The petition for an administrative hearing must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of publication of notice of agency action or within 14 days of personal receipt of notice of agency action, whichever occurs first. The petitioner is to mail a copy of the petition to the applicant at the time of filing. Failure to file a petition within this time period will constitute a waiver of any right such person may have to request an administrative determination (hearing) under section 120.57, F.S. The petition is to contain the following information:

- 1) The name, address and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
- 2) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- 3) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
- 4) A statement of the material facts which the petitioner contends warrant reversal or modification of the Department's action or proposed action;
- 5) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and
- 6) A statement of the relief sought by the petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in the notice of agency action. Persons whose substantial interests will be affected by any decision of the Department on the application have the right to petition to become a party to the proceeding, regardless of their agreement or disagreement with the Department's proposed action indicated in the notice of agency action.