

Effluent Quality Assessment
Town of Baldwin WWTF

Duval County

NPDES #FL0027812

Sampled October 10, 12 and 14, 2011

February 2012

Biology Section
Bureau of Laboratories
Division of Environmental Assessment and Restoration

Quality Manual No. 870346G
NELAC Certification No. E31780

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Town of Baldwin Wastewater Treatment Facility (WWTF), 800 South Main Street, Baldwin, Duval County, Florida, 32234. NPDES #FL0027812. Effluent grab and composite samples for biological and chemical analyses for this facility were collected on October 12, 2011. An effluent grab sample for bioassay analyses was collected on October 10, 2011; effluent composite samples for bioassay were collected on October 12 and 14, 2011.

Introduction

The Town of Baldwin WWTF is a 0.400 million gallon per day annual average flow permitted capacity activated sludge domestic wastewater treatment facility operating in extended aeration mode utilizing the Modified Ludzack-Ettinger process for biological nitrogen removal. (See Appendix C for additional facility information submitted by Heather Webber of FDEP Northeast District.)

Methods

Samples were collected from the EFD-1 NPDES sampling point for Outfall D-001 by Eesa Ali and Sharon Piltz (FDEP Northeast District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling. All DEP SOPs are available on the web at: http://www.floridadep.org/labs/bars/sas/sop/index.htm.

See Appendix A for the completed chain of custody forms. Email confirmation was received from the District samplers that EFD-1 was sampled rather than EFF-1 as indicated on the submittal forms.

The chronic toxicity tests and algal growth potential (AGP) test were performed following internal DEP SOPs TA07_05, TA07_09, and TA08_01 through TA08_09. All internal DEP SOPs are available on the web at: http://www.floridadep.org/labs/cgi-bin/sop/biosop.asp.

Results and Discussion

- **Toxicity Test Results***
  Tests performed October 11 - 15, 2011.

  Ceriodaphnia dubia chronic definitive bioassay – reproduction IC25 = No Result

  Pimephales promelas chronic screening bioassay – growth IC25 = No Result

  The bioassay tests are reported as No Result because the third set of bioassay samples collected on October 14, 2011, were received in the lab after the hold time was exceeded; therefore, invalidating the chronic tests. The tests were terminated at 96 hours.

  For information purposes only, the bioassay samples (collected on October 10 and 12, 2011) were not acutely toxic to the *Ceriodaphnia dubia* (10% mortality in 100% sample) or to the *Pimephales promelas* (2.5% mortality in 100% sample) test organisms at 96 hours.

  *Bioassay bench sheets, SRT benchsheets and organism receipts are omitted from this report due to the “No Result” status of the tests.

- **Algal Growth Potential**
  The effluent Algal Growth Potential (AGP) was 24.7 mg dry wt/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. Raschke and Schultz (1987) determined that AGP values above 5.0 mg dry weight/L represent a “problem” threshold for fresh receiving waters, implying nutrient enrichment. The analytical chemistry suggests that the effluent is nitrogen limited. To determine actual nutrient limitation, a limiting-nutrient algal growth potential test with associated nutrient chemistry should be performed (Miller et al. 1978).

  See Tables 1 for AGP results and qualifiers.

- **Chemistry Results**
  Total residual chlorine (TRC) and total ammonia were not detected in the bioassay samples in the bioassay laboratory. The total ammonia concentration in the composite sample collected and preserved for chemical analysis was 0.75 mg N/L. Based on the pH, salinity, and temperature of the effluent grab sample as collected, the unionized ammonia concentration in the grab sample was < 0.02 mg N/L.

  Effluent dissolved oxygen (DO) concentrations (6.37 mg/L on 10/10/2011; 5.55 mg/L on 10/12/11) as measured in the field were less than the DO limit (≥ 7.0 mg/L) set forth in the facility's NPDES permit (FL0027812); but, were in compliance with the DO criterion (≥ 5.0 mg/L) for Class III freshwater.

  Effluent copper, iron, silver and zinc exceeded their respective freshwater criterion (62-302.530, F.A.C.). Effluent total suspended solids (TSS) although exceeding the facility's permitted numerical limit (≤ 60 mg/L) was from a grab sample and not an 8-hour flow proportioned composite sample as required by the facility's permit. Chromium, lead and nickel were detected in the effluent at levels that comply with Class III freshwater quality criteria (62-302.530, F.A.C.). Arsenic, cadmium and selenium were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL). Aluminum, chloride, fluoride, sulfate, carbonaceous biochemical oxygen demand (CBOD) and fecal coliforms were also detected in the effluent. The effluent CBOD and fecal coliforms were in compliance with permitted limits.

  See Table 2 for results of analytes detected in the effluent, corresponding limits, and qualifiers. See Appendix C for a complete list of chemical analyses performed.

Conclusion

The bioassay tests performed on effluent samples collected from the EFD-1 NPDES sampling point for Outfall D-001 for this facility on October 10 and 12, 2011, were reported as *No Result* because the bioassay sample collected on October 14, 2011 exceeded the hold-time prior to receipt; thus invalidating the tests. The effluent AGP results were greater than the "problem" threshold for fresh receiving waters suggesting that nutrient enrichment may be an issue.

Effluent dissolved oxygen (DO) concentrations (6.37 mg/L on 1/10/2011; 5.55 mg/L on 1/12/11) as measured in the field were less than the DO limit (≥ 7.0 mg/L) set forth in the facility's NPDES permit (FL0027812); but were in compliance with the DO criterion (≥ 5.0 mg/L) for Class III freshwater.

Effluent copper, iron, silver and zinc exceeded their respective Class III freshwater criterion (62-302.530, F.A.C.). The total suspended solids (TSS) concentration although exceeding the facility's permitted (NPDES #FL0027812) numerical limit for TSS was from a single grab sample rather than an 8-hour flow proportioned composite sample as required by the facility's permit, thus a violation of the permit limit cannot be determined.

Additional effluent water quality samples collected on October 12, 2011, did not exceed any applicable Class III freshwater quality standards or limits found in NPDES permit #FL0001465.

Literature Cited

Miller, W. E., T. E. Maloney, and J. C. Greene. 1978. The *Selenastrum capricornutum* Printz algal assay bottle test. EPA-600/9-78-018. U. S. EPA, Cincinnati, Ohio. 126 p.

Raschke, R. L. and D. A. Schultz. 1987. The use of the algal growth potential test for data assessment. J. Wat. Poll. Cont. Fed. 59(4): 222-227.

Table 1. Measured and predicted algal growth potential (AGP; mg dry weight/L) for total soluble inorganic nitrogen (TSIN) and total nitrogen (TN) limitation of the freshwater species *Pseudokirchneriella subcapitata,* for samples collected from the EFD-1 NPDES sampling point for Outfall D-001 for the Town of Baldwin WWTF on October 12, 2011.

Baldwin WWTF NPDES #FL0027812					
Location	AGP (measured)	Predicted AGP (TSIN) ± 20%	Predicted AGP (TN) ± 20%	Inorganic N:P ratio	Total N:P ratio
Effluent 10-12-11	24.7	30.7 ± 6.1	169.4 ± 33.9	1.7	1.5

Table 2. Effluent limits, Class III Freshwater Criteria and chemical and microbiological data for samples collected from the EFD-1 NPDES sampling point for Outfall D-001 of the Town of Baldwin WWTF on October 10 and 12, 2011.

Town of Baldwin WWTF NPDES# FL0027812	Class III Criteria	Effluent Limits	Effluent Collected 10-12-11	Effluent Collected 10-10-11
Organic Constituents (µg/L)				
None Detected	-	-	-	-
Metals (µg/L unless otherwise noted)				
Aluminum	-	-	1820	-
Arsenic	≤ 50	-	0.64 I	-
Cadmium	≤ 0.38 b	-	0.16 I	-
Calcium (mg/L)	-	-	40.5	-
Chromium-III	≤ 124.78 b	-	2	-
Copper	≤ 13.73 b	-	34.1	-
Iron	≤ 1,000	-	1390	-
Lead	≤ 5.56 b	-	3.8	-
Magnesium (mg/L)	-	-	13.6	-
Nickel	≤ 76.45 b	-	4.25	-
Selenium	≤ 5.0	-	0.43 I	-
Silver	≤ 0.07	-	0.11	-
Zinc	≤ 175.72 b	-	220	-
Nutrients (mg/L)				
Ortho-phosphate	-	Report	0.48	-
Total Phosphorus	-	Report	3	-
Total Ammonia	-	1.40 p	0.75	-
Un-ionized Ammonia	≤ 0.02 s	Report	≤ 0.02 c	-
Nitrate and Nitrite	-	Report	0.059	-
Total Kjeldahl Nitrogen	-	-	4.4	-
Organic Nitrogen	-	Report	3.65 c	-
Total Nitrogen	-	Report	4.459 c	-
General Physical and Chemical Parameters				
Dissolved Oxygen (mg/L)	≥ 5.0	≥ 7.0 s	5.6	6.4
pH (SU)	6.0 - 8.5	6.0 - 7.5 s	7.2	7.6
Conductivity (µmhos/cm)	≤ 1,275	-	521	573
Temperature (°C)	-	Report	27.3	26.4
Sample Depth (m)	-	-	0.2	0.2
Total Residual Chlorine (mg/L)	≤ 0.01	*	0.03 UQ£	0.03 UQ£
Chlorophyll *a* (µg/L) - Corrected	-	-	1 I	-
Phaeophytin (µg/L)	-	-	0.4 U	-
Total Suspended Solids (mg/L)	-	≤ 60 p	69	-
CBOD, 5 day (mg/L), N - inhibited	-	≤ 6.40 p	4.8	-
Chloride (mg/L)	-	-	45	-
Fluoride (mg/L)	≤ 10.0	-	0.38	-
Sulfate (mg/L)	-	-	41	-
Flow (MGD)	-	≤ 0.4 a	0.2063 a	-
Hardness (mg $CaCO_3$)	-	-	157.13 c	-
Microbiology (Number of colony forming units/100ml)				
Fecal Coliforms ¥	≤ 400s #	≤ 800 s	460	-

Value exceeds the Class III Water Quality Criteria or permit limits

a - Annual average
b - Value is calculated based on hardness
c - Value is calculated
p - 8 hour flow proportioned composite
s - Single sample
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
Q - Sample held beyond normal holding time
U - Material analyzed for but not detected; value reported is the method detection limit
¥ - Fecal coliform analysis performed by Columbia Analytical Services Inc., lab
- If 10 or fewer samples are taken within a month, the single sample limit is 400 CFU (62-302.530(6), F.A.C.)
£ - measurement taken in the FDEP laboratory
* - Facility uses Ultraviolet Light for disinfection

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2011-10-10-40
FYI3 Baldwin WWTF Sampling Inspection

Requester: Michelle Fish
Field Report Prepared By: S.P.; HE

Customer: NE-DIST
Project ID: FYI3
PMAS: 1143

Collected By: EA/SP
Send Final Report To: Tom Rauth

Sampling Agency: NED

Lab ID *	Location: Baldwin WWTP EFF-1			☑ Comp ☑ Grab	Collection (begin) Date 10/10/11 Time 1220 ~~Eastern~~ Central	Collection (end) Date Time Eastern Central		Bottle Group(s)**	
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L) 6.37	Storet Station Number		14	
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C) 26.42	pH 7.60	Sample Depth ☑ m ☐ ft 0.2	0.28 ☑ Salinity (PPTh) 573 ☑ Sp Conductance (umho/cm)		NPDES Number		
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		Comments					
Lab ID *	Location			☐ Comp ☐ Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central		Bottle Group(s)**	
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number			
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)		NPDES Number		
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		Comments					
Lab ID *	Location			☐ Comp ☐ Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central		Bottle Group(s)**	
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number			
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)		NPDES Number		
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		Comments					
Lab ID *	Location			☐ Comp ☐ Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central		Bottle Group(s)**	
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number			
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)		NPDES Number		
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		Comments 2 biopassay Reid to Tox by JD. 10/17 10.1.11					

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
	10/10/11	FedEX	ABS	10-11-11 09:35				

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

RQ-2011-10-10-4

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: ~~RQ-2011-03-28-22~~ ~~SE~~ Baldwin WWTP

Requester: Sharon Piltz

Field Report Prepared By: S. Piltz

Customer: NE-DIST
Project ID: DISCRTNARY
PMAS:

Collected By: S. Piltz / E. Ali

Send Final Report To: ~~Drew Brown~~ Tom Routt

Sampling Agency: DEP NED

Lab ID *	Location / Field ID	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Latitude	Longitude	Collection (begin)	Collection (end)	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	Sample Depth	Salinity (PPTh) / Sp Conductance (umho/cm)	NPDES Number	Bottle Group(s)**	Comments
	Baldwin WWTP EFF-1		27.26	7.16	☐ dd ☐ dms	☐ dd ☐ dms	☑ Grab Date 10/12/11 Time 940 ~~Eastern~~ Central	Date Time Eastern Central		5.55		0.2 ☑ m ☐ ft	0.25 ☐ Salinity (PPTh) 521 ☐ Sp Conductance (umho/cm)		A	
	Blank				☐ dd ☐ dms	☐ dd ☐ dms	☑ Grab Date 10/12/11 Time 945 ~~Eastern~~ Central	Date Time Eastern Central				☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)		B	
	Baldwin WWTP EFF-1				☐ dd ☐ dms	☐ dd ☐ dms	☐ Grab Date 10/11/11 Time 2200 ~~Eastern~~ Central	Date 10/12/11 Time 0600 ~~Eastern~~ Central				☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)		A	
					☐ dd ☐ dms	☐ dd ☐ dms	☐ Grab Date Time Eastern Central	Date Time Eastern Central				☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)			2 bioassay Reed 1, Tox by J.D. 6959 10.13.11

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
	10/12/11	Fed EX	Tyhmaver	10-13-11 9:10				

~~Shaded~~ Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

Appendix B. Chemical Analyses performed on the effluent collected from the Town of Baldwin WWTF EFD-1 NPDES sampling point for Outfall D-001, sampled October 12, 2011.

Date	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
10/10/2011 12:20	Baldwin WWTP EFD-1	Toxicology	Bioassay-Chron-Def-FW-C.dubia, IC25	No Result	O	IC25		
10/10/2011 12:20	Baldwin WWTP EFD-1	Toxicology	Bioassay-Chron-Def-FW-Fish, IC25	No Result	O	IC25		
10/10/2011 12:20	Baldwin WWTP EFD-1	Field Parameter	Dissolved Oxygen	6.37		mg/L		
10/10/2011 12:20	Baldwin WWTP EFD-1	Field Parameter	Specific Conductance	573		umhos/cm		
10/10/2011 12:20	Baldwin WWTP EFD-1	Field Parameter	Temperature	26.42		C		
10/10/2011 12:20	Baldwin WWTP EFD-1	Field Parameter	Sample Depth	0.2		m		
10/10/2011 12:20	Baldwin WWTP EFD-1	Field Parameter	pH	7.6				
10/12/2011 9:40	Baldwin WWTP EFD-1	AGP/LN	Algal Growth Potential	24.7		mg DryWt/L	0.3	0.9
10/12/2011 9:40	Baldwin WWTP EFD-1	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.4	U	ug/L	0.4	1.2
10/12/2011 9:40	Baldwin WWTP EFD-1	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	1	I	ug/L	0.55	1.7
10/12/2011 9:40	Baldwin WWTP EFD-1	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	4.8		mg/L	0.2	2
10/12/2011 9:40	Baldwin WWTP EFD-1	Overflow	Fecal Coliforms-Membrane Filter	460		cfu/100 mL	10	10
10/12/2011 9:40	Baldwin WWTP EFD-1	Metals	Chromium	2		ug/L	0.3	1.2
10/12/2011 9:40	Baldwin WWTP EFD-1	Metals	Cadmium	0.16	I	ug/L	0.05	0.2
10/12/2011 9:40	Baldwin WWTP EFD-1	Metals	Iron	1390		ug/L	30	120
10/12/2011 9:40	Baldwin WWTP EFD-1	Metals	Zinc	220		ug/L	5	20
10/12/2011 9:40	Baldwin WWTP EFD-1	Metals	Sodium	43.4		mg/L	0.5	2
10/12/2011 9:40	Baldwin WWTP EFD-1	Metals	Calcium	40.5		mg/L	0.075	0.3
10/12/2011 9:40	Baldwin WWTP EFD-1	Metals	Selenium	0.43	I	ug/L	0.2	0.8
10/12/2011 9:40	Baldwin WWTP EFD-1	Metals	Lead	3.8		ug/L	0.2	0.8
10/12/2011 9:40	Baldwin WWTP EFD-1	Metals	Arsenic	0.64	I	ug/L	0.25	1
10/12/2011 9:40	Baldwin WWTP EFD-1	Metals	Aluminum	1820		ug/L	15	60
10/12/2011 9:40	Baldwin WWTP EFD-1	Metals	Copper	34.1		ug/L	0.5	1
10/12/2011 9:40	Baldwin WWTP EFD-1	Metals	Magnesium	13.6		mg/L	0.04	0.16
10/12/2011 9:40	Baldwin WWTP EFD-1	Metals	Nickel	4.25		ug/L	0.25	1
10/12/2011 9:40	Baldwin WWTP EFD-1	Metals	Silver	0.11		ug/L	0.025	0.1
10/12/2011 9:40	Baldwin WWTP EFD-1	Nutrients	Total-P	3		mg P/L	0.025	0.25
10/12/2011 9:40	Baldwin WWTP EFD-1	Nutrients	O-Phosphate-P	0.48		mg P/L	0.02	0.05
10/12/2011 9:40	Baldwin WWTP EFD-1	Nutrients	Ammonia-N	0.75		mg N/L	0.01	0.02
10/12/2011 9:40	Baldwin WWTP EFD-1	Nutrients	Kjeldahl Nitrogen	4.4		mg N/L	0.4	1
10/12/2011 9:40	Baldwin WWTP EFD-1	Nutrients	Alkalinity	139		mg CaCO3/L	0.65	2.5
10/12/2011 9:40	Baldwin WWTP EFD-1	Nutrients	Sulfate	41		mg SO4/L	1	2.5
10/12/2011 9:40	Baldwin WWTP EFD-1	Nutrients	TSS	69		mg/L	2	10
10/12/2011 9:40	Baldwin WWTP EFD-1	Nutrients	Fluoride	0.38		mg F/L	0.035	0.1
10/12/2011 9:40	Baldwin WWTP EFD-1	Nutrients	Organic Carbon	7.5		mg C/L	1	5
10/12/2011 9:40	Baldwin WWTP EFD-1	Nutrients	Chloride	45		mg Cl/L	1	2.5

Appendix B. continued

Date	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
10/12/2011 9:40	Baldwin WWTP EFD-1	Nutrients	NO2NO3-N	0.059		mg N/L	0.004	0.01
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Naled	0.8	U	ug/L	0.8	3.2
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Alachlor	0.6	U	ug/L	0.6	2.4
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Hexazinone	0.1	U	ug/L	0.1	0.4
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	1
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.8
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Atrazine	0.05	U	ug/L	0.05	0.2
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Chlorpyrifos Methyl	0.1	U	ug/L	0.1	0.4
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Ethoprop	0.1	U	ug/L	0.1	0.4
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Metolachlor	0.5	UJ	ug/L	0.5	2
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Metribuzin	0.1	U	ug/L	0.1	0.4
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Phorate	0.05	U	ug/L	0.05	0.2
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Diazinon	0.05	U	ug/L	0.05	0.2
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Fonofos	0.1	U	ug/L	0.1	0.4
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Parathion Methyl	0.1	U	ug/L	0.1	0.4
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Bromacil	0.2	UJ	ug/L	0.2	0.8
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Butylate	0.2	U	ug/L	0.2	0.8
10/12/2011 9:40	Baldwin WWTP EFD-1	Pesticides	Azinphos Methyl	0.2	U	ug/L	0.2	0.8
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	2,4-Dinitrophenol	15	U	ug/L	15	61
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Phenol	1	U	ug/L	1	4.1
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1	U	ug/L	1	4.1
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	N-Nitrosodimethylamine	2	U	ug/L	2	8.2
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Pentachlorophenol	3.1	U	ug/L	3.1	12
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1	U	ug/L	1	4.1
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2	U	ug/L	2	8.2
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Benzo(a)anthracene	0.2	U	ug/L	0.2	0.82
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.2	U	ug/L	0.2	0.82
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Diethyl phthalate	1	U	ug/L	1	4.1

Appendix B. continued

Date	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Dimethyl phthalate	10	U	ug/L	10	41
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Hexachlorobutadiene	3.1	U	ug/L	3.1	12
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.1	U	ug/L	3.1	12
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.1	U	ug/L	3.1	12
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Nitrobenzene	2	U	ug/L	2	8.2
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	2-Nitrophenol	1	U	ug/L	1	4.1
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Acenaphthene	0.2	U	ug/L	0.2	0.82
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	15	U	ug/L	15	61
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.2	U	ug/L	0.2	0.82
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Hexachlorobenzene	1	U	ug/L	1	4.1
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Hexachloroethane	3.1	U	ug/L	3.1	12
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1	U	ug/L	1	4.1
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Benzo(b)fluoranthene	0.2	U	ug/L	0.2	0.82
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Benzo(k)fluoranthene	0.2	U	ug/L	0.2	0.82
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	2,4-Dimethylphenol	10	U	ug/L	10	41
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	2,4,6-Trichlorophenol	1	U	ug/L	1	4.1
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	2,4-Dichlorophenol	1	U	ug/L	1	4.1
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	2-Chloronaphthalene	1	U	ug/L	1	4.1
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1	U	ug/L	3.1	12
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	4-Chloro-3-methylphenol	1	U	ug/L	1	4.1
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	61
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Acenaphthylene	0.2	U	ug/L	0.2	0.82
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Benzo(a)pyrene	0.2	U	ug/L	0.2	0.82
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Di-n-butyl phthalate	5.1	U	ug/L	5.1	20
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Di-n-octyl phthalate	1	U	ug/L	1	4.1
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Naphthalene	0.2	U	ug/L	0.2	0.82
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Phenanthrene	0.2	U	ug/L	0.2	0.82
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2	U	ug/L	2	8.2
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	2,4-Dinitrotoluene	1	U	ug/L	1	4.1
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	2,6-Dinitrotoluene	1	U	ug/L	1	4.1
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	2-Chlorophenol	1	U	ug/L	1	4.1
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	3,3'-Dichlorobenzidine	41	UJ	ug/L	41	160
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Anthracene	0.2	U	ug/L	0.2	0.82
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.1	U	ug/L	3.1	12
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Butyl benzyl phthalate	5.1	U	ug/L	5.1	20
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Isophorone	1	U	ug/L	1	4.1
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Pyrene	0.2	U	ug/L	0.2	0.82

Appendix B. continued

Date	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1	U	ug/L	1	4.1
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Chrysene	0.2	U	ug/L	0.2	0.82
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Fluoranthene	0.2	U	ug/L	0.2	0.82
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Fluorene	0.2	U	ug/L	0.2	0.82
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.2	U	ug/L	0.2	0.82
10/12/2011 9:40	Baldwin WWTP EFD-1	Priority Organic Pollutants	Benzidine	100	UJ	ug/L	100	410
10/12/2011 9:40	Baldwin WWTP EFD-1	Field Parameter	Sample Depth	0.2		m		
10/12/2011 9:40	Baldwin WWTP EFD-1	Field Parameter	pH	7.16				
10/12/2011 9:40	Baldwin WWTP EFD-1	Field Parameter	Temperature	27.26		C		
10/12/2011 9:40	Baldwin WWTP EFD-1	Field Parameter	Specific Conductance	521		umhos/cm		
10/12/2011 9:40	Baldwin WWTP EFD-1	Field Parameter	Dissolved Oxygen	5.55		mg/L		
10/12/2011 9:45	Blank	Metals	Zinc	5	U	ug/L	5	20
10/12/2011 9:45	Blank	Metals	Sodium	0.5	U	mg/L	0.5	2
10/12/2011 9:45	Blank	Metals	Magnesium	0.04	U	mg/L	0.04	0.16
10/12/2011 9:45	Blank	Metals	Selenium	0.2	U	ug/L	0.2	0.8
10/12/2011 9:45	Blank	Metals	Arsenic	0.25	U	ug/L	0.25	1
10/12/2011 9:45	Blank	Metals	Nickel	0.25	U	ug/L	0.25	1
10/12/2011 9:45	Blank	Metals	Cadmium	0.05	U	ug/L	0.05	0.2
10/12/2011 9:45	Blank	Metals	Calcium	0.075	U	mg/L	0.075	0.3
10/12/2011 9:45	Blank	Metals	Copper	0.5	U	ug/L	0.5	1
10/12/2011 9:45	Blank	Metals	Aluminum	5	U	ug/L	5	20
10/12/2011 9:45	Blank	Metals	Chromium	0.3	U	ug/L	0.3	1.2
10/12/2011 9:45	Blank	Metals	Iron	30	U	ug/L	30	120
10/12/2011 9:45	Blank	Metals	Silver	0.025	U	ug/L	0.025	0.1
10/12/2011 9:45	Blank	Metals	Lead	0.2	U	ug/L	0.2	0.8
10/12/2011 9:45	Blank	Nutrients	Sulfate	0.2	U	mg SO4/L	0.2	0.5
10/12/2011 9:45	Blank	Nutrients	Total-P	0.004	U	mg P/L	0.004	0.01
10/12/2011 9:45	Blank	Nutrients	Chloride	0.2	U	mg Cl/L	0.2	0.5
10/12/2011 9:45	Blank	Nutrients	Fluoride	0.035	U	mg F/L	0.035	0.1
10/12/2011 9:45	Blank	Nutrients	Organic Carbon	1	U	mg C/L	1	5
10/12/2011 9:45	Blank	Nutrients	Alkalinity	0.65	U	mg CaCO3/L	0.65	2.5
10/12/2011 9:45	Blank	Nutrients	Kjeldahl Nitrogen	0.08	U	mg N/L	0.08	0.2
10/12/2011 9:45	Blank	Nutrients	NO2NO3-N	0.004	U	mg N/L	0.004	0.01
10/12/2011 9:45	Blank	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
10/12/2011 9:45	Blank	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
10/12/2011 9:45	Blank	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.78
10/12/2011 9:45	Blank	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.59

Appendix B. continued

Date	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
10/12/2011 9:45	Blank	Pesticides	Parathion Methyl	0.098	U	ug/L	0.098	0.39
10/12/2011 9:45	Blank	Pesticides	Butylate	0.2	U	ug/L	0.2	0.78
10/12/2011 9:45	Blank	Pesticides	Ethion	0.049	U	ug/L	0.049	0.2
10/12/2011 9:45	Blank	Pesticides	Azinphos Methyl	0.2	U	ug/L	0.2	0.78
10/12/2011 9:45	Blank	Pesticides	Bromacil	0.2	UJ	ug/L	0.2	0.78
10/12/2011 9:45	Blank	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.59
10/12/2011 9:45	Blank	Pesticides	Metolachlor	0.49	UJ	ug/L	0.49	2
10/12/2011 9:45	Blank	Pesticides	Simazine	0.049	U	ug/L	0.049	0.2
10/12/2011 9:45	Blank	Pesticides	Metribuzin	0.098	U	ug/L	0.098	0.39
10/12/2011 9:45	Blank	Pesticides	Fonofos	0.098	U	ug/L	0.098	0.39
10/12/2011 9:45	Blank	Pesticides	Ametryn	0.049	U	ug/L	0.049	0.2
10/12/2011 9:45	Blank	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	0.98
10/12/2011 9:45	Blank	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.59
10/12/2011 9:45	Blank	Pesticides	Diazinon	0.049	U	ug/L	0.049	0.2
10/12/2011 9:45	Blank	Pesticides	Chlorpyrifos Ethyl	0.049	U	ug/L	0.049	0.2
10/12/2011 9:45	Blank	Pesticides	Alachlor	0.59	U	ug/L	0.59	2.4
10/12/2011 9:45	Blank	Pesticides	Naled	0.78	U	ug/L	0.78	3.1
10/12/2011 9:45	Blank	Pesticides	Atrazine	0.049	U	ug/L	0.049	0.2
10/12/2011 9:45	Blank	Pesticides	Phorate	0.049	U	ug/L	0.049	0.2
10/12/2011 9:45	Blank	Pesticides	Malathion	0.15	U	ug/L	0.15	0.59
10/12/2011 9:45	Blank	Pesticides	Ethoprop	0.098	U	ug/L	0.098	0.39
10/12/2011 9:45	Blank	Pesticides	Hexazinone	0.098	U	ug/L	0.098	0.39
10/12/2011 9:45	Blank	Pesticides	Chlorpyrifos Methyl	0.098	U	ug/L	0.098	0.39
10/12/2011 9:45	Blank	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.78
10/12/2011 9:45	Blank	Priority Organic Pollutants	2-Chlorophenol	1	U	ug/L	1	4.1
10/12/2011 9:45	Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1	U	ug/L	1	4.1
10/12/2011 9:45	Blank	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	62
10/12/2011 9:45	Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.21	U	ug/L	0.21	0.82
10/12/2011 9:45	Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1	U	ug/L	1	4.1
10/12/2011 9:45	Blank	Priority Organic Pollutants	Dimethyl phthalate	10	U	ug/L	10	41
10/12/2011 9:45	Blank	Priority Organic Pollutants	Hexachlorobenzene	1	U	ug/L	1	4.1
10/12/2011 9:45	Blank	Priority Organic Pollutants	Pentachlorophenol	3.1	U	ug/L	3.1	12
10/12/2011 9:45	Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.21	U	ug/L	0.21	0.82
10/12/2011 9:45	Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1	U	ug/L	1	4.1
10/12/2011 9:45	Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	15	U	ug/L	15	62
10/12/2011 9:45	Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.1	U	ug/L	3.1	12
10/12/2011 9:45	Blank	Priority Organic Pollutants	Naphthalene	0.21	U	ug/L	0.21	0.82

Appendix B. continued

Date	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
10/12/2011 9:45	Blank	Priority Organic Pollutants	Nitrobenzene	2.1	U	ug/L	2.1	8.2
10/12/2011 9:45	Blank	Priority Organic Pollutants	Phenanthrene	0.21	U	ug/L	0.21	0.82
10/12/2011 9:45	Blank	Priority Organic Pollutants	Phenol	1	U	ug/L	1	4.1
10/12/2011 9:45	Blank	Priority Organic Pollutants	Pyrene	0.21	U	ug/L	0.21	0.82
10/12/2011 9:45	Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	1	U	ug/L	1	4.1
10/12/2011 9:45	Blank	Priority Organic Pollutants	Acenaphthene	0.21	U	ug/L	0.21	0.82
10/12/2011 9:45	Blank	Priority Organic Pollutants	Acenaphthylene	0.21	U	ug/L	0.21	0.82
10/12/2011 9:45	Blank	Priority Organic Pollutants	Anthracene	0.21	U	ug/L	0.21	0.82
10/12/2011 9:45	Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.1	U	ug/L	3.1	12
10/12/2011 9:45	Blank	Priority Organic Pollutants	Fluorene	0.21	U	ug/L	0.21	0.82
10/12/2011 9:45	Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.1	U	ug/L	3.1	12
10/12/2011 9:45	Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.21	U	ug/L	0.21	0.82
10/12/2011 9:45	Blank	Priority Organic Pollutants	Butyl benzyl phthalate	5.2	U	ug/L	5.2	21
10/12/2011 9:45	Blank	Priority Organic Pollutants	Chrysene	0.21	U	ug/L	0.21	0.82
10/12/2011 9:45	Blank	Priority Organic Pollutants	Hexachlorobutadiene	3.1	U	ug/L	3.1	12
10/12/2011 9:45	Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1	U	ug/L	2.1	8.2
10/12/2011 9:45	Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1	U	ug/L	1	4.1
10/12/2011 9:45	Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	1	U	ug/L	1	4.1
10/12/2011 9:45	Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1	U	ug/L	3.1	12
10/12/2011 9:45	Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.21	U	ug/L	0.21	0.82
10/12/2011 9:45	Blank	Priority Organic Pollutants	Diethyl phthalate	1	U	ug/L	1	4.1
10/12/2011 9:45	Blank	Priority Organic Pollutants	Isophorone	1	U	ug/L	1	4.1
10/12/2011 9:45	Blank	Priority Organic Pollutants	2,4-Dichlorophenol	1	U	ug/L	1	4.1
10/12/2011 9:45	Blank	Priority Organic Pollutants	2-Nitrophenol	1	U	ug/L	1	4.1
10/12/2011 9:45	Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	41	UJ	ug/L	41	160
10/12/2011 9:45	Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.21	U	ug/L	0.21	0.82
10/12/2011 9:45	Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.21	U	ug/L	0.21	0.82
10/12/2011 9:45	Blank	Priority Organic Pollutants	Hexachloroethane	3.1	U	ug/L	3.1	12
10/12/2011 9:45	Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.21	U	ug/L	0.21	0.82
10/12/2011 9:45	Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	1	U	ug/L	1	4.1
10/12/2011 9:45	Blank	Priority Organic Pollutants	2,4-Dinitrophenol	15	U	ug/L	15	62
10/12/2011 9:45	Blank	Priority Organic Pollutants	2-Chloronaphthalene	1	U	ug/L	1	4.1
10/12/2011 9:45	Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.1	U	ug/L	2.1	8.2
10/12/2011 9:45	Blank	Priority Organic Pollutants	Di-n-butyl phthalate	5.2	U	ug/L	5.2	21
10/12/2011 9:45	Blank	Priority Organic Pollutants	2,4-Dimethylphenol	10	U	ug/L	10	41
10/12/2011 9:45	Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	1	U	ug/L	1	4.1
10/12/2011 9:45	Blank	Priority Organic Pollutants	Benzidine	100	UJ	ug/L	100	410

Appendix B. continued

Date	Field ID	Analysis	Component	Results	Remark	Units	MDL	PQL
10/12/2011 9:45	Blank	Priority Organic Pollutants	Di-n-octyl phthalate	1	U	ug/L	1	4.1
10/12/2011 9:45	Blank	Priority Organic Pollutants	Fluoranthene	0.21	U	ug/L	0.21	0.82
10/12/2011 9:45	Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.1	U	ug/L	2.1	8.2

Appendix C. Facility Summary for Town of Baldwin WWTF

October 2011

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: Heather Webber	**Contact Number:** 904-256-1622
Facility Name (as it appears on permit): Town of Baldwin WWTF	**Former Names:** N/A
NPDES Permit Number: FL0027812	**Permit Expiration Date:** 12/25/12
Physical Address: 800 South Main Street, Baldwin, FL 32234	
District: Northeast	**County:** Duval
Function of Facility: Domestic wastewater treatment plant	
Facility Type: Domestic	**Permitted Capacity (MGD):** 0.400
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): 0.22 MGD August 2010 – July 2011	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months): N/A	
Description of type of Discharge: ☒ **Continuous** ☐ **Intermittent** ☐ **Seasonal** ☐ **Rainfall Dependent** ☐ **Other, please specify**	
Description of Sampling Location(s) - actual permit designation of permitted sampling point(s): EFD-1 – Effluent, after final treatment, prior to discharge to the ditch EFF-1 – Sample point at the UV disinfection channels INF-1 – Influent, prior to physical, biological or chemical treatment, or dilution	
Description of Permitted Outfall(s): Outfall D-001 is a 10" PVC pipe 5-ft from shore discharging at a depth of approximately 3.5 feet below water surface, and located approximately at latitude 30° 17' 46" N, longitude 81° 58' 45" W.	
Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility): 0.400 MGD annual average daily flow permitted capacity activated sludge domestic wastewater treatment facility (WWTF) operating in extended aeration mode utilizing the Modified Ludzack-Ettinger process for biological nitrogen removal. The WWTF consists of one 560-gpm influent lift station, one 12,500-gallon preliminary treatment unit consisting of a 6-ft wide static screen and aerated grit chamber, an aerated 159,600-gallon flow equalization basin with three 280-gpm transfer pumps, one biological treatment unit (BTU) having an 100,000-gallon anoxic basin, a 345,000-gallon aeration basin, a 131,000-gallon secondary clarifier, a 2-compartment aerobic digester (90,000-gallons), followed by a filtration unit with four 7.2' diameter woven polyester filter-discs, a 6-module ultraviolet (UV) disinfection unit, a 560-gpm effluent pump station and a post-treatment aeration unit (oxycharger). Flow is measured by a parshall flume in conjunction with an ultrasonic flow meter following UV disinfection. Discharge is to an unnamed ditch tributary discharging to the Little St. Mary's River (Class III fresh waters).	

Appendix C. continued

October 2011

PART I: Continued

List current Effluent Limits of Outfall(s) to be Sampled: This should include any AO or CO limits the facility may be under (Leave cell blank if not applicable)

			Effluent Limitations				Monitoring Requirements			
Parameter	**Units**	**Max/Min**	**Annual Average**	**Monthly Average**	**Weekly Average**	**Single Sample**	**Monitoring Frequency**	**Sample Type**	**Monitoring Location Site Number**	**Notes**
Flow	MGD	Maximum	0.400	Report			5 Days/Week	Recording flow meters and totalizers	EFD-1	
Percent Capacity, (TMADF/Permitted Capacity) x 100	PERCENT	Maximum		Report (Total)			Monthly	Calculated	CAL-1	
BOD, Carbonaceous 5 day, 20C	MG/L	Maximum	3.20	4.00	4.80	6.40	Every Two Weeks	8-hour flow proportioned composite (FPC)	EFD-1	
Solids, Total Suspended	MG/L	Maximum	20.00	30.00	45.00	60.00	Every Two Weeks	8-hour FPC	EFD-1	
pH	SU	Range				6.0 to 7.5	5 Days/Week	Grab	EFD-1	
Coliform, Fecal	#/100ML	Maximum					Every Two Weeks	Grab	EFD-1	1
Ultraviolet Light Dosage	MW-S/CM2	Minimum					5 Days/Week	Monitored	EFF-1	2
Ultraviolet Light Transmittance	PERCENT	Minimum					5 Days/Week	Monitored	EFF-1	2
Ultraviolet Light Intensity	MW/CM2	Minimum				Report	5 Days/Week	Meter	EFF-1	2
Nitrogen, Ammonia, Total (as N)	MG/L	Maximum	0.70	0.90	1.00	1.40	Every Two Weeks	8-hour FPC	EFD-1	
Nitrogen, Ammonia, Total unionized (as N)	MG/L	Maximum				Report	Every Two Weeks	Calculated	CAL-6	3
Temperature (C), Water	DEG.C	Maximum				Report	Every Two Weeks	Meter	EFD-1	
Oxygen, Dissolved (DO)	MG/L	Minimum				7.0	5 Days/Week	Grab	EFD-1	

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Nitrite plus Nitrate, Total (as N)	MG/L	Maximum		Report		Report	Every Two Weeks	8-hour FPC	EFD-1	
Nitrogen, Total (as N)	MG/L	Maximum		Report		Report	Every Two Weeks	8-hour FPC	EFD-1	
Nitrogen, Total (as N)	Lbs/month	Maximum		Report (Monthly Total)			Monthly	Calculated	CAL-2	
Nitrogen, Total (Accumulated mass loading)	LB/YR	Maximum	13,083.0 (Annual Total)				Monthly	Calculated	CAL-3	
Phosphorus, Total (as P)	MG/L	Maximum		Report		Report	Every Two Weeks	8-hour FPC	EFD-1	
Phosphorus, Total (as P)	Lbs/month	Maximum		Report (Monthly Total)			Monthly	Calculated	CAL-4	
Phosphorus, Total (as P) (Accumulated load)	LB/YR	Maximum	2,528.8 (Annual Total)				Monthly	Calculated	CAL-5	
Nitrogen, Organic, Total (as N)	MG/L	Maximum				Report	Quarterly	8-hour FPC	EFD-1	
Phosphate, Ortho (as P)	MG/L	Maximum				Report	Quarterly	Filtered Grab	EFD-1	
Acute Whole Effluent Toxicity									EFD-1	4

Note 1: The arithmetic mean shall not exceed 200 per 100 mL of effluent. The geometric mean shall not exceed 200 per 100 mL of sample. The 90th percentile shall not exceed 400 per 100 mL of sample. Any one sample shall not exceed 800 per 100 mL of sample.
Note 2: This UV system shall be monitored for proper operation on each day of operator attendance.
Note 3: Calculated based upon a single grab sample that is analyzed for total ammonia.
Note 4: See Toxicity Testing Requirements below.

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PART I: Continued

Receiving Waters: Little St. Mary's River	**Classification (indicate whether fresh or marine):** Class III fresh water

Toxicity Test Requirements (routine and/or additional test language, test species, salinity adjustment, etc.):
Whole effluent acute toxicity shall not exceed in any routine or in any additional follow-up test an LC50 of less than 100% effluent. Routine toxicity tests shall be conducted semi-annually. All tests will be conducted on a single grab sample of final effluent. All routine tests shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 75%, 50%, 25%, and 12.5% final effluent. The permittee shall conduct 96-hour acute, static-renewal, multi-concentration toxicity tests using the daphnid, *Ceriodaphnia dubia*, and the bannerfin shiner, *Cyprinella leedsi*, concurrently. The control and dilution water used will be moderately hard water as described in EPA-821-R-02-012, Table 7. A standard reference toxicant quality assurance acute toxicity test shall be conducted with each species used in the required toxicity tests either concurrently or initiated no more than 30 days before the date of each routine or additional follow-up test conducted. If the mortality in the control (0% effluent) exceeds 10% for either species in any test, the test for that species (including the control) shall be invalidated and the test repeated. The repeat test shall begin within 14 days after the last day of the invalid test. If 100% mortality occurs in all effluent concentrations prior to the end of any test and the control mortality is less than 10% at that time, the test (including the control) shall be terminated with the conclusion that the test fails and constitutes non-compliance.

Administrative or Consent Orders (date executed, specific requirements, interim limit dates-if applicable, etc.):
None currently active (AO 103 expired 12/31/10 and CO 08-2301 closed 11/22/10)

Facility Mixing Zone Details (if applicable):
N/A

List Permit Violations (DMR data) and plant upsets that occurred at the plant within the last year:

Date	Parameter and Units	Limit	Result
12/31/10	Total Nitrogen	13,803 lbs/yr	18,770 lbs/yr
01/31/11	Total Nitrogen	13,803 lbs/yr	15,302 lbs/yr

Describe previous FYI and WQBEL study:
01/09/09 - The effluent sample collected from Outfall D-001 was not acutely toxic to either test species during the 48-hour acute screening bioassays. The effluent AGP result greatly exceeded the "problem" threshold for fresh receiving waters, implying nutrient enrichment. Total nitrogen exceeded the original permit conditions, but not the interim limits provided by CO 08-2301. Fecal Coliforms exceeded both the Class III fresh water criterion and the NPDES permit conditions.

Describe previous or current Enforcement Actions (including WLs):
Consent Order 08-2301 – SFCO issued for an unauthorized bypass. Executed 04/29/09. Closed 11/22/10.
Warning Letter WL-10-012-DW issued 02/12/10 for failure to submit DMRs. Resolved.

Describe any violations or problems noted in previous inspection:
None – 11/10/10 and 02/11/11 CEIs were 'In Compliance'

Discuss whether DMR trends within previous five years are improving or declining:
Total Nitrogen seems to be trending downward. Flow and TSS appear to be increasing.

Additional Comments (this should include a trend of the Effluent, i.e. if the facility is now Reuse):
N/A

Appendix C. continued

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PART II: Sampling Event Information	
Date(s) sample collected:	**Sampler(s):**
Temperature (Deg C):	**pH (SU):**
Dissolved Oxygen (mg/L):	**Conductivity (umhos/cm):**
Total Residual Chlorine (mg/L):	**Total Residual Chlorine - after Disinfection (mg/L):**
Method of Chlorination:	**Method of De-chlorination:**
Flow During Sample Collection for each outfall(MGD):	
Mean Flow for each outfall for previous 12 months based on sampling date (If samples are taken on more than one day, indicate Mean Flow for each day):	
Describe Discharge during Sampling Event: ☐ **Continuous** ☐ **Intermittent** ☐ **Seasonal** ☐ **Rainfall Dependent** ☐ **Other, please specify**	
Describe any conditions, difficulties or abnormal events that occurred during the sample collection and any other additional comments here:	

Appendix D. EPA End Sheet

The Bioassays of the Town of Baldwin WWTF effluent sampled on October 10, 12 and 14, 2011. NPDES #FL0027812.

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 2 7 8 1 2 11	12 1 1 1 0 1 0	18 B	19 S	20 1

Remarks

Tests invalidated holding time issue

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The Priority Pollutants Analysis of the Town of Baldwin WWTF effluent sampled on October 12, 2011. NPDES #FL0027812.

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 2 7 8 1 2 11	12 1 1 1 0 1 0	18 X	19 S	20 1

Remarks

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Biological Analyses of the Town of Baldwin WWTF effluent sampled on October 12, 2011. NPDES #FL0027812.

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 2 7 8 1 2 11	12 1 1 1 0 1 0	18 S	19 S	20 1

Remarks

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