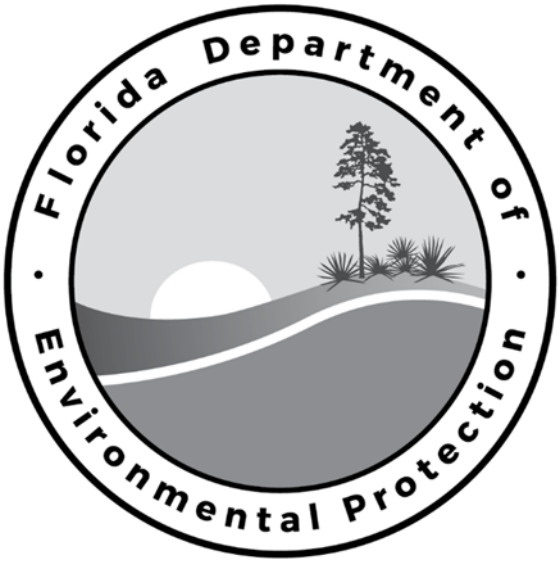


Effluent Quality Assessment of

Town of Baldwin WWTF

Duval County

NPDES # FL0027812

Sampled February 13, 15 and 17, 2017

June 2017

Biology Program

DEP Laboratory

Division of Environmental Assessment and Restoration

DEP Laboratory Quality Manual

NELAC Certification No. E31780

CONTENTS

Facility Overview

Methods

Results

Conclusion

Literature Cited

Tables

Table 1. Effluent limits, Class III Freshwater Criteria and field parameters

Table 2. Effluent limits, Class III Freshwater Criteria and analytical water chemistry data

Table 3. Effluent limits, Class III Freshwater Criteria and analytical metals data

Table 4. Measured and predicted algal growth potential (AGP; mg dry weight/L) for total soluble inorganic nitrogen (TSIN), ortho-phosphate (OP), total nitrogen (TN) and total phosphorus (TP) limitation and ratios of nitrogen to phosphorus.

Appendices

Appendix A. Facility Summary

Appendix B. Explanation of measurements

Appendix C. Chemical Analyses of Effluent

EPA End Sheet

Town of Baldwin Wastewater Treatment Facility (WWTF), 800 South Main Street, Baldwin, Duval County, Florida, 32234. NPDES #FL0027812.

Facility Overview

Town of Baldwin WWTF is a wastewater treatment facility which uses the modified Ludzack-Ettinger (MLE) Process to treat domestic wastewater. See Appendix A for a description of the facility, summary of permit limits, Administrative Order (AO) and Discharge Monitoring Report (DMR) information.

Methods

Effluent grab samples for toxicity testing were collected on February 13, 15, and 17, 2017. Effluent grab samples for biological and chemical analyses for this facility were collected on February 13, 2017. All samples were collected from the EFD-1 NPDES sampling point for Outfall D-001 by Brian Davis and Patrick O'Connor (DEP Northeast Regional Operation Center).

All field and laboratory methods followed DEP Standard Operating Procedures (see http://www.dep.state.fl.us/labs/library/lab_sops.htm and http://www.dep.state.fl.us/water/sas/sop/sops.htm for details) and met DEP quality assurance/quality control standards (see http://www.dep.state.fl.us/water/sas/qa/index.htm). Explanations of specific methods and measurements can be found in Appendix C.

Results

Chemistry Results (See Table 1, Table 2, Table 3 and Appendix C)

- Receiving waters for this facility fall within the Peninsular Nutrient Watershed Region for Numeric Nutrient Criteria (NNC). This Fifth Year Inspection (FYI) event can only provide single sample results, therefore, compliance should be determined with additional sampling events.
  http://ca.dep.state.fl.us/mapdirect/?focus=nutrientcriteria

- Bioassay samples were analyzed in the bioassay laboratory for Total Residual Chlorine (TRC). TRC concentrations were 0.09 mg/L in bioassay sample #1; 0.04 mg/L in bioassay sample #2 and 0.04 mg/L in bioassay sample #3. Chlorine is not used as part of the wastewater treatment process at the facility. Based on communication between DEP NE District personnel and facility personnel, it is suspected that the detected TRC was the result of facility house-keeping procedures (bleach is used to clean the weirs on a weekly basis); however, other causes such as interfering substances cannot be ruled out. Although the effluent's TRC, as measured in the bioassay samples, was greater than the Class III Freshwater Criterion for total residual chlorine; (≤ 0.01 mg/L; 62-302.530(18) F.A.C.) due to the uncertainty of the origin of the TRC, an exceedance cannot be assigned. The total ammonia concentration in the grab sample collected and preserved for chemical analysis was 0.021 I mg N/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was < 0.02 mg/L.
- Alkalinity, arsenic, copper, fluoride, iron, nickel, turbidity, and zinc were detected in the effluent at levels that comply with Class III Freshwater Quality Criteria (62-302.530, F.A.C.). Cadmium, total chromium, lead and selenium were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL). Fecal coliforms exceeded both Class II Freshwater Criteria and permitted limits.
- Due to failure of the composite sampler, total ammonia, total Kjeldahl nitrogen, carbonaceous biological oxygen demand and total suspended solids were collected as grab samples rather than composite samples as required the facility's permit.

Algal Growth Potential (AGP) (See Table 4 and Appendix C)

- The effluent AGP was 505 A mg dry wt/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum.* The effluent AGP result was substantially greater than the AGP range (6.10-20.0 mg dry wt/L) suggested to be representative of high productivity for fresh water (Miller et al. 1978). The analytical chemistry suggests that the effluent is nitrogen–limited (Miller et al. 1978).

Toxicity Test Results (See Appendix C)

- Tests were performed February 14 through 21, 2017.
- Chronic bioassay results are reported as the 25% Inhibition Concentration (IC25) and the No Observed Effect Concentration (NOEC).*

  Ceriodaphnia dubia 7-day chronic definitive bioassay – IC25 is >100%
  No Observed Effect Concentration (NOEC) is 100%

  Pimephales promelas 7-day chronic definitive bioassay – IC25 is >100%
  No Observed Effect Concentration (NOEC) is 100%

  *NOTE: A 25% inhibition concentration (IC25) is the effluent concentration causing a 25% reduction in a biological response such as biomass or reproduction when compared to a control population. An IC25 of less than 100% in a chronic test may constitute exceedances of 62-302.530(20), 62-302.530(61) and/or facility permit limits. A no observed effect concentration (NOEC) less than 100% effluent in a chronic test may constitute an exceedance of 62-302.530(61) and/or facility permit limits.

- The bioassay samples were not chronically toxic to the test organisms.

Conclusion

The effluent samples collected from the EFD-1 NPDES sampling point for this facility on February 13, 15, and 17, 2017, were not chronically toxic to either test species during the 7-day chronic definitive bioassays. The effluent AGP result was substantially greater than the AGP range (6.10-20.0 mg dry wt/L) suggested to be representative of high productivity for fresh water: Therefore, the effluent has the potential to contribute nutrient enrichment to the receiving water. Total Residual Chlorine (TRC) was detected in each of the bioassay samples (effluent) in the bioassay laboratory at concentrations greater than the Class III Freshwater Criterion for residual chlorine. Because chlorine is not used as part of the wastewater treatment process, the TRC is thought to be from bleach used at the facility to clean the weirs, but other causes cannot be ruled out. We recommend that the facility measure TRC in the effluent prior to discharge to determine the effectiveness of the dichlorination procedure used after the weir cleaning process. Fecal coliforms exceeded both Class II Freshwater Criteria and permitted limits.

Additional effluent samples collected on February 13, 2017 did not exceed any applicable water quality standards or any permit conditions.

For additional information concerning this sampling event, including bioassay bench sheets and SRT data, please contact Amelia.Rankin@dep.state.fl.us and/or Joseph.Faircloth@dep.state.fl.us.

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.

Stevenson, R. J. and L. L. Bahls. 1999. Periphyton protocols. Pp. 6.1-6.22 in: Rapid bioassessment protocols for use in wadeable streams and rivers. 2nd edition. By: M. T. Barbour, J. Gerritsen, B. D. Snyder and J. B. Stribling. EPA 841-B-99-002. U. S. Environmental Protection Agency, Office of Water, Washington, D. C.

Table 1. Effluent limits, Class III Freshwater Criteria and field parameters.

Town of Baldwin WWTF	Units	Class III Criteria	Effluent Permit Limits	Final Eff	Final Eff Grab
Sample Depth	m	-	-	0.1	0.1
Temperature	C	-	Report	21.6	21.6
pH	SU	6.0 - 8.5	6.0 – 7.5	6.7	6.7
Specific Conductance	µmhos/cm	≤ 1,275	-	564	564
Salinity	ppt	-	-	0.3 c	0.3 c
Dissolved Oxygen	mg/L	≥ 5.0	≥ 7.0	7.59	7.59
Dissolved Oxygen	% saturation	≥ 38	-	86.6	86.6

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.

c - Value is calculated

Table 2. Effluent limits, Class III Freshwater Criteria and analytical water chemistry data.

Town of Baldwin WWTF	Units	Class III Criteria	Effluent Permit Limits	Final Eff	Final Eff Grab
Ortho-phosphate	mg P/L	-	Report	2.7	-
Total Phosphorus	mg P/L	-	Report	-	2.9[1]
Total Ammonia	mg N/L	-	≤ 1.40 p	-	0.021
Un-ionized	mg/L	≤ 0.02 s	≤ 0.02 s	-	< 0.02 c
Nitrate and Nitrite	mg N/L	-	Report	-	11
Total Kjeldahl Nitrogen	mg N/L	-	≤ 1.40 p	-	1.4 J
Organic Nitrogen	mg N/L	-	Report	-	1.4 c
Total Nitrogen	mg N/L	-	Report	-	12 c
Total Organic Carbon	mg C/L	-	-	-	8.4
Chlorophyll *a* - Corrected	µg/L	-	-	0.57 I	-
Phaeophytin	µg/L	-	-	0.40 U	-
Chlorophyll *a*-Uncorrected	µg/L	-	-	1.9 I	-
CBOD, 5 day, N - inhibited	mg/L	-	≤ 6.40 p	-	0.89 I
Total Suspended Solids	mg/L	-	≤ 60.0 p	-	2 I
Turbidity	NTU	< 29 t	-	1.6	-
Color (true)	PCU	-	-	32	-
Alkalinity	mg $CaCO_3$ /L	≥ 20	-	-	113
Chloride	mg Cl/L	-	-	58 A	-
Fluoride	mg F/L	≤ 10.0	-	0.35	-
Sulfate	mg SO_4/L	-	-	35 A	-
Microbiology					
Fecal Coliforms[2]	cfu/100 mL	≤ 400s #	≤ 800s	7100 B[3]	-
Toxicity (IC25, Chronic Definitive, % effluent)					
Bioassay - Water flea *(Ceriodaphnia dubia)*	% effluent	≥ 100	≥ 100	-	> 100
Bioassay - Fish *(Pimephales promelas)*	% effluent	≥ 100	≥ 100	-	> 100

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
c - Value is calculated
p – flow proportioned composite sample
s - Single sample
t - Shall not exceed 29 NTUs above background
A - Value reported is the mean of two or more determinations
B - Results based on colony counts outside the acceptance range
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limitJ - Estimated value
U - Material analyzed for but not detected; value reported is the method detection limit
- If 10 or fewer samples are taken within a month, the single sample limit is 400 CFU (62-302.530(6), F.A.C.)
1 – Analyte was detected in both Field Blank (Total P 0.003 I mg/L) and Equipment Blank (Total P 0.004 I mg/L).
2 - Fecal coliform analysis performed by ALS Environments-Jacksonville lab
3 -Value exceeds the Class III Water Quality Criteria or permit limits

Table 3. Effluent limits, Class III Freshwater Criteria and analytical metals data

Town of Baldwin WWTF	Units	Class III Criteria	Effluent Permit Limits	Final Eff
Hardness	mg $CaCO_3$/L	-	-	154 c
Aluminum	µg/L	-	-	36
Arsenic	µg/L	≤ 50	-	0.56
Cadmium	µg/L	≤ 0.372 b	-	0.059 I
Calcium	mg/L	-	-	40.7
Chromium, Total[3]	µg/L	≤ 122 b	-	0.42 I
Copper	µg/L	≤ 13.5 b	-	6.37
Iron	µg/L	≤ 1,000	-	300
Lead	µg/L	≤ 5.49 b	-	0.19 I
Magnesium	mg/L	-	-	12.6
Nickel	µg/L	≤ 75 b	-	1.56
Potassium	mg/L	-	-	12.4
Selenium	µg/L	≤ 5.0	-	0.22 I
Silver	µg/L	≤ 0.07	-	0.010 U
Sodium	mg/L	-	-	44.3
Zinc	µg/L	≤ 172 b	-	53

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
b - Value is calculated based on hardness, (62-302.530(3))
c - Value is calculated
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
U - Material analyzed for but not detected; value reported is the method detection limit
3 - Class III Freshwater Quality Criterion (62-302.530(19)(a), F.A.C.) is for chromium-III

Table 4. Measured and predicted algal growth potential (AGP; mg dry weight/L) for total soluble inorganic nitrogen (TSIN), ortho-phosphate (OP), total nitrogen (TN) and total phosphorus (TP) limitation and ratios of nitrogen to phosphorus

Town of Baldwin WWTF								
Location	**Test Species**	**AGP (measured)**	**Predicted AGP (TSIN) ± 20%**	**Predicted AGP (OP) ± 20%**	**Predicted AGP (TN) ± 20%**	**Predicted AGP (TP) ± 20%**	**Inorganic N:P ratio**	**Total N:P ratio**
Final Eff	*Pseudokirchneriella subcapitata*	505 A	418 ± 83.6	1161 ± 232.2	471.2 ± 94.2	1247 ± 249.4	4.1	4.3[4]

4 – Result manually calculated using results from Grab sample

Appendix A
Facility Summary
State of Florida

Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: Brittany Dion	**Contact Number:** 904-256-1678
Facility Name (as it appears on permit): Town of Baldwin WWTF	**Former Names:** N/A
NPDES Permit Number: FL0027812	**Permit Expiration Date:** 01/02/2018
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): 0.23 MGD December 2015- January 2017 (Missing Aug, Sep, Oct DMR's)	
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): CAL-1 Calculated Value, 3-month average daily flow/permitted capacity EFD-1 Effluent, after final treatment, but prior to discharge to the ditch EFF-1 Sample point at the UV disinfection channels (Basic Level) FLW-1 Effluent flow meter, ultrasonic transducer on Parshall flume downstream of filter unit SWD-1 Ambient sample	
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): An existing 0.400 million gallons per day (MGD) annual average daily flow (AADF) permitted capacity activated sludge domestic wastewater treatment facility (WWTF) operating in extended aeration mode utilizing the modified Ludzack-Ettinger (MLE) process for biological nutrient removal (BNR). 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 tank with three 280-gpm transfer pumps, one biological treatment unit (BTU) having an anoxic volume of 100,000-gallon (45,000-gallon, 55,000-gallon), a 345,000-gallon aeration basin, a 131,000-gallon secondary clarifier (38.5-ft diameter, 15-ft SWD), a 2-compartment aerobic digester (90,000-gallons), followed by a filtration unit having four 7.2-ft diameter woven polyester filter-discs, an ultraviolet (UV) radiation disinfection unit (6 modules with 4 UV lamps/module), a 560-gpm effluent pump station and a posttreatment effluent aeration unit (Oxycharger). Flow is measured by an ultrasonic flowmeter on a Parshall flume following the disc-filters. Treated effluent is discharged to a ditch tributary to Deep Creek (Class III Fresh Waters) via outfall D-001.	

PART I: Continued

List <u>current</u> 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)

Parameter	Units	Max/ Min	Limit	Statistical Basis	Frequency of Analysis	Sample Type	Monitoring Site Number	Notes
Flow	MGD	Max Max Max	0.400 Report Report	Annual Average Monthly Average Quarterly Average	5 Days/Week	Recording Flow Meter with Totalizer	FLW-1	See I.A.3
Percent Capacity, (TMADF/Permitted Capacity) x 100	percent	Max	Report	Monthly Total	Monthly	Calculated	CAL-1	
BOD, Carbonaceous 5-day, 20ºC	mg/L	Max Max Max Max	3.20 4.00 4.80 6.40	Annual Average Monthly Average Weekly Average Single Sample	Bi-weekly; every 2 weeks	8-hr FPC †	EFD-1	
Solids, Total Suspended	mg/L	Max Max Max Max	20.0 30.0 45.0 60.0	Annual Average Monthly Average Weekly Average Single Sample	Bi-weekly; every 2 weeks	8-hr FPC †	EFD-1	
Solids, Total Suspended, % Removal	percent	Min	85	Monthly Average	Monthly	Calculated	CAL-1	
pH	s.u.	Min Max	6.0 7.5	Single Sample Single Sample	5 Days/Week	Grab	EFD-1	See I.A.5
Coliform, Fecal	#/100mL	Max Max Max	200 200 800	Annual Average Monthly Geometric Mean Single Sample	Bi-weekly; every 2 weeks	Grab	EFD-1	See I.A.4
Oxygen, Dissolved (DO)	mg/L	Min	7.0	Single Sample	5 Days/Week	Grab	EFD-1	See I.A.6

Parameter	Units	Max/ Min	Limit	Statistical Basis	Frequency of Analysis	Sample Type	Monitoring Site Number	Notes
Ultraviolet Light Dosage	mW-s /sqcm	Min	See Condition I.A.8		5 Days/Week	Monitored	EFF-1	
Ultraviolet Light Transmittance	percent	Min	See Condition I.A.8		5 Days/Week	Monitored	EFF-1	
Ultraviolet Light Intensity	mW/sqcm	Min	Report	Single Sample	5 Days/Week	Meter	EFF-1	See I.A.8
Nitrogen, Ammonia, Total unionized (as N)	mg/L	Max	0.02	Single Sample	Bi-weekly; every 2 weeks	Calculated	CAL-1	See I.A.5
Nitrogen, Ammonia, Total (as N)	mg/L	Max Max Max Max	0.70 0.90 1.00 1.40	Annual Average Monthly Average Weekly Average Single Sample	Bi-weekly; every 2 weeks	8-hr FPC †	EFD-1	
Temperature (ºC), Water	Deg ºC	Max	Report	Single Sample	Bi-weekly; every 2 weeks	Meter	EFD-1	See I.A.5
Nitrite plus Nitrate, Total 1 det. (as N)	mg/L	Max Max	Report Report	Monthly Average Single Sample	Bi-weekly; every 2 weeks	8-hr FPC †	EFD-1	See I.A.11
Nitrogen, Total	mg/L	Max	Report Report	Monthly Average Single Sample	Bi-weekly; every 2 weeks	8-hr FPC †	EFD-1	See I.A.11
Phosphorus, Total (as P)	mg/L	Max	Report Report	Monthly Average Single Sample	Bi-weekly; every 2 weeks	8-hr FPC †	EFD-1	See I.A.11
Nitrogen, Total	lb/month lb/year	Max	Report 13,083	Monthly Total Annual Total	Monthly	Calculated	CAL-1	See I.A.7

Phosphorus, Total (as P)	lb/month lb/year	Max	Report 2,528.8	Monthly Total Annual Total	Monthly	Calculated	CAL-1	See I.A.7
Nitrogen, Organic, Total (as N)	mg/L	Max	Report	Single Sample	Quarterly	8-hr FPC †	EFD-1	See I.A.11
Phosphate, Ortho (as P)	mg/L	Max	Report	Single Sample	Quarterly	Filtered Grab	EFD-1	See I.A.11
Total nitrogen (as N)	mg/L	Max	1.54 Report	Annual Geometric Mean Single Sample	Quarterly	Grab	SWD-1	See I.A.14, 15
Phosphorus, Total	mg/L	Max	0.12 Report	Annual Geometric Mean Single Sample	Quarterly	Grab	SWD-1	See I.A.14, 15
IC25, Chronic Whole Effluent Toxicity	Percent	Min	100	Single Sample	Semi-Annual	8-hr FPC	EFD-1	See I.A.16

PART I: Continued

Receiving Waters:	**Classification (indicate whether fresh or marine):**
Deep Creek	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 fathead minnow, ***Pimephales promelas***, Larval Survival and Growth Test, concurrently. The control and dilution water used will be moderately hard water as described in EPA-821-R-02-013. 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.

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:

D-001	11/30/2016	CAL-1	P 00612	Nitrogen, Ammonia, Total unionized (as N)	0.04	0.02	mg/L	MB - Maximum
D-001	6/30/2016	EFD-1	P 00400	pH	7.6	7.5	s.u.	MB - Maximum
D-001	5/31/2016	EFD-1	P 74055	Coliform, Fecal	1804.0	200.0	#/100mL	AB - Annual Average
D-001	5/31/2016	EFD-1	P 00400	pH	7.7	7.5	s.u.	MB - Maximum
D-001	4/30/2016	EFD-1	P 74055	Coliform, Fecal	206.5	200.0	#/100mL	AB - Annual Average
D-001	3/31/2016	EFD-1	P 74055	Coliform, Fecal	3024.6	200.0	#/100mL	AB - Annual Average
D-001	2/29/2016	EFD-1	P 74055	Coliform, Fecal	3035.1	200.0	#/100mL	AB - Annual Average
D-001	2/29/2016	EFD-1	P 00300	Oxygen, Dissolved (DO)	6.0	7.0	mg/L	ME - Minimum
D-001	1/31/2016	EFD-1	P 00610	Nitrogen, Ammonia, Total (as N)	1.8	0.9	mg/L	MK - Monthly Average
D-001	1/31/2016	EFD-1	P 00610	Nitrogen, Ammonia, Total (as N)	3.6	1.4	mg/L	MB - Maximum
D-001	1/31/2016	EFD-1	P 74055	Coliform, Fecal	3035.1	200.0	#/100mL	AB - Annual Average

Describe previous FYI and WQBEL study:
The Department's Level-1 WQBEL was used to derive the effluent CBOD and Ammonia limits on the previous permit renewal using Streeter-Phelps modeling analysis of the critical dissolved oxygen sag response. The resulting effluent CBOD and Ammonia limits ensure effluent DO levels of at least 7.0 mg/L, and thereby ensuring compliance with the Class III Fresh Water criterion (> 5.0 mg/L). Therefore, there is no evidence to show the effluent discharges to the ditch cause or contribute to the DO impairment in Deep Creek.

Describe previous or current Enforcement Actions (including WLs):
N/A

Describe any violations or problems noted in previous inspection:
2/2013: food kept in storage refrigerator, daily logbook incomplete, data not transferred correctly from DMR part B to A, half of the data by lab not submitted to DEP, several months of DMR did not include percent capacity, lift station warning system not operational, documentation of calibration for flow meter not available.

Discuss whether DMR trends within previous five years are improving or declining:
Nitrogen, pH, and fecal had spike in beginning- mid 2016.

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

PART II: Sampling Event Information

Date(s) sample collected:	**Sampler(s):**
Temperature (Deg C):	**pH (SU):**
Dissolved Oxygen (mg/L):	**Conductivity (µmhos/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 B

Explanation of Measurements

(1) Quality Assurance and Quality Control

FDEP's quality assurance requirements for analytical laboratories and field activities are codified in Chapter 62-160, F.A.C., Quality Assurance (QA Rule) and in internal Standard Operating Procedures (FDEP SOPs). Methods for all analyses are on file at the DEP Laboratory in Tallahassee and may be viewed on the web at http://www.dep.state.fl.us/labs/library/lab_sops.htm and/or http://www.dep.state.fl.us/water/sas/sop/sops.htm.

(2) Chemical Analyses of the Effluent

The effluent was analyzed for nutrients, metals, organic constituents (base, neutral, and acid extractables) and pesticides following FDEP SOPs. The results from these analyses were compared with Water Quality Criteria (62-302, F.A.C.) and facility permit limits.

(3) Toxicity Bioassays

Greater than 50% mortality in an acute toxicity test may constitute an exceedance of 62-302.500(1)a and/or facility permit limits. A 25% inhibition concentration (IC25) is the effluent concentration causing a 25% reduction in a biological response such as biomass or reproduction when compared to a control population. An IC25 of less than 100% in a chronic test may constitute exceedances of 62-302.530(20), 62-302.530(61) and/or facility permit limits. A no observed effect concentration (NOEC) less than 100% effluent in a chronic test may constitute an exceedance of 62-302.530(61) and/or facility permit limits. Standard reference toxicant (SRT) tests are conducted monthly to ensure quality in toxicity testing.

(4) Bacteriological Testing

High levels of fecal coliform bacteria may constitute an exceedance of 62-302.530(6) and/or facility permit limits. Fecal coliform and enterococci results often are based on colony counts outside the acceptable range (B-qualifier). The dilutions performed on the sample did not yield results within the method acceptable range of 20- 60 colony forming units per plate. The B-qualifier does not affect data quality.

(5) Chlorophyll *a* Content

Chlorophyll *a* content is an estimate algal biomass. High algal biomass implies nutrient stress (Stevenson and Bahls 1999) and may constitute exceedances of 62-302.530(46), F.A.C., 62-302.530(47)(a), F.A.C., and/or 62-302.530(47)(b), F.A.C..

(6) Algal Growth Potential (AGP)

The algal growth potential (AGP) value is the peak growth of the alga within that 14-day period, recorded as mg dry weight/L. The AGP range of 6.10 to 20.0 mg dry wt/L is suggested to be representative of high productivity for freshwater (Miller et al. 1978). High AGP values may constitute exceedances of 62-302.530(46), F.A.C., 62-302.530(47)(a), F.A.C. and/or 62-302.530(47)(b), F.A.C..

The concentration of nutrients in a water sample may be used to calculate the expected yield of AGP in a low salinity sample under the assumption that other required nutrients (e.g. silicon, micronutrients) are present in excess (Miller *et al*. 1978). The expected amount of production is calculated as 38 times the total soluble inorganic nitrogen (nitrate and nitrite plus ammonia) under nitrogen limitation or 430 times the ortho-phosphate (OP) concentration under phosphorus limitation with an error of $\pm$ 20%. When the ratio of nitrogen to phosphorus (N:P) is less than 10:1, nitrogen limitation of algal production is likely. When the N:P ratio is 20:1 or greater, phosphorus limitation is likely (EPA-822-B-00-002). For ratios in-between, co-limitation may occur. Production of lower biomass than expected may be evidence of growth inhibition related to toxic compounds present in the water sample tested and may constitute an exceedance of 62-302.530(61) F.A.C. Expected AGP is not calculated for marine samples incubated with *Dunaliella*.

(7) Definition of Qualifiers

A - Value reported is the mean of two or more determinations
B - Results based on colony counts outside the acceptable range.
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J - Estimated value
K - Actual value is known to be less than value given
L - Actual value is known to be greater than value given
N - Presumptive evidence of presence of material.
O - Sampled, but analysis lost or not performed.
Q - Sample held beyond normal holding time.
T - Value reported is less than the criterion of detection.
U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
V - Analyte was detected in both sample and method blank.
X - Too few individuals to calculate SCI value.
Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate
Z - Colonies were too numerous to count (TNTC)

Appendix C

Chemical analysis of effluent

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
2/13/2017	Final Eff	AGP/LN	Algal Growth Potential	505 A	mg DryWt/L	0.3	0.9
2/13/2017	Final Eff	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.40 U	µg/L	0.4	1.2
2/13/2017	Final Eff	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	0.53 I	µg/L	0.4	1.2
2/13/2017	Final Eff	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.57 I	µg/L	0.55	1.7
2/13/2017	Final Eff	Chlorophyll/Grain Size/BOD	Chlorophyll/Phaeophytin Ratio	1.9		0	0
2/13/2017	Final Eff	Overflow	Fecal Coliforms-Membrane Filter	7100 B	cfu/100 mL	100	100
2/13/2017	Final Eff	Metals	Nickel	1.56	µg/L	0.2	0.8
2/13/2017	Final Eff	Metals	Zinc	53	µg/L	5	20
2/13/2017	Final Eff	Metals	Magnesium	12.6	mg/L	0.04	0.16
2/13/2017	Final Eff	Metals	Copper	6.37	µg/L	0.2	0.8
2/13/2017	Final Eff	Metals	Sodium	44.3	mg/L	0.5	2
2/13/2017	Final Eff	Metals	Iron	300	µg/L	30	120
2/13/2017	Final Eff	Metals	Potassium	12.4	mg/L	0.3	1.2
2/13/2017	Final Eff	Metals	Calcium	40.7	mg/L	0.075	0.3
2/13/2017	Final Eff	Metals	Lead	0.19 I	µg/L	0.05	0.2
2/13/2017	Final Eff	Metals	Cadmium	0.059 I	µg/L	0.02	0.08
2/13/2017	Final Eff	Metals	Arsenic	0.56	µg/L	0.05	0.2
2/13/2017	Final Eff	Metals	Silver	0.010 U	µg/L	0.01	0.04
2/13/2017	Final Eff	Metals	Chromium	0.42 I	µg/L	0.4	1.6
2/13/2017	Final Eff	Metals	Selenium	0.22 I	µg/L	0.2	0.8
2/13/2017	Final Eff	Metals	Aluminum	36	µg/L	3	12
2/13/2017	Final Eff	Nutrients	Chloride	58 A	mg Cl/L	0.4	1
2/13/2017	Final Eff	Nutrients	Sulfate	35 A	mg SO4/L	0.4	1
2/13/2017	Final Eff	Nutrients	Fluoride	0.35	mg F/L	0.035	0.1
2/13/2017	Final Eff	Nutrients	Color (true)	32	PCU	2.5	6
2/13/2017	Final Eff	Nutrients	Total Alkalinity	113	mg CaCO3/L	0.65	2.5
2/13/2017	Final Eff	Nutrients	Turbidity	1.6	NTU	0.1	0.1
2/13/2017	Final Eff	Nutrients	O-Phosphate-P	2.7	mg P/L	0.04	0.1
2/13/2017	Final Eff	Pesticides	Alachlor	0.057 U	µg/L	0.057	0.23
2/13/2017	Final Eff	Pesticides	Hexazinone	0.028 UJ	µg/L	0.028	0.11
2/13/2017	Final Eff	Pesticides	Parathion Methyl	0.0094 U	µg/L	0.0094	0.038
2/13/2017	Final Eff	Pesticides	Acetaminophen	0.0040 U	µg/L	0.004	0.016

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
2/13/2017	Final Eff	Pesticides	Atrazine	0.0094 U	µg/L	0.0094	0.038
2/13/2017	Final Eff	Pesticides	Fonofos	0.0094 U	µg/L	0.0094	0.038
2/13/2017	Final Eff	Pesticides	Metribuzin	0.019 U	µg/L	0.019	0.076
2/13/2017	Final Eff	Pesticides	Norflurazon	0.028 U	µg/L	0.028	0.11
2/13/2017	Final Eff	Pesticides	Carbamazepine	0.097	µg/L	0.0004	0.0016
2/13/2017	Final Eff	Pesticides	Atrazine Desisopropyl	0.0094 U	µg/L	0.0094	0.038
2/13/2017	Final Eff	Pesticides	Azinphos Methyl	0.019 U	µg/L	0.019	0.076
2/13/2017	Final Eff	Pesticides	Demeton	0.023 U	µg/L	0.023	0.091
2/13/2017	Final Eff	Pesticides	Disulfoton	0.0047 U	µg/L	0.0047	0.019
2/13/2017	Final Eff	Pesticides	Metalaxyl	0.038 UJ	µg/L	0.038	0.15
2/13/2017	Final Eff	Pesticides	Prometon	0.019 UJ	µg/L	0.019	0.076
2/13/2017	Final Eff	Pesticides	Sucralose	59	µg/L	0.1	0.4
2/13/2017	Final Eff	Pesticides	Diazinon	0.0094 U	µg/L	0.0094	0.038
2/13/2017	Final Eff	Pesticides	Fenamiphos	0.028 UJ	µg/L	0.028	0.11
2/13/2017	Final Eff	Pesticides	Naled	0.038 U	µg/L	0.038	0.15
2/13/2017	Final Eff	Pesticides	Parathion Ethyl	0.019 U	µg/L	0.019	0.076
2/13/2017	Final Eff	Pesticides	Prometryn	0.019 U	µg/L	0.019	0.076
2/13/2017	Final Eff	Pesticides	Ametryn	0.0094 U	µg/L	0.0094	0.038
2/13/2017	Final Eff	Pesticides	Butylate	0.019 U	µg/L	0.019	0.076
2/13/2017	Final Eff	Pesticides	Malathion	0.0094 U	µg/L	0.0094	0.038
2/13/2017	Final Eff	Pesticides	Simazine	0.0094 U	µg/L	0.0094	0.038
2/13/2017	Final Eff	Pesticides	Atrazine Desethyl	0.0094 U	µg/L	0.0094	0.038
2/13/2017	Final Eff	Pesticides	Chlorpyrifos Methyl	0.0094 U	µg/L	0.0094	0.038
2/13/2017	Final Eff	Pesticides	Mevinphos	0.0094 U	µg/L	0.0094	0.038
2/13/2017	Final Eff	Pesticides	Phorate	0.0047 U	µg/L	0.0047	0.019
2/13/2017	Final Eff	Pesticides	Bromacil	0.095 U	µg/L	0.095	0.38
2/13/2017	Final Eff	Pesticides	Chlorpyrifos Ethyl	0.0094 U	µg/L	0.0094	0.038
2/13/2017	Final Eff	Pesticides	Ethion	0.0094 U	µg/L	0.0094	0.038
2/13/2017	Final Eff	Pesticides	Ethoprop	0.0047 U	µg/L	0.0047	0.019
2/13/2017	Final Eff	Pesticides	Metolachlor	0.057 U	µg/L	0.057	0.23
2/13/2017	Final Eff	Priority Organic Pollutants	2-Nitrophenol	0.95 U	µg/L	0.95	3.8
2/13/2017	Final Eff	Priority Organic Pollutants	Pentachlorophenol	0.95 U	µg/L	0.95	3.8
2/13/2017	Final Eff	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9 U	µg/L	1.9	7.6
2/13/2017	Final Eff	Priority Organic Pollutants	Chrysene	0.19 U	µg/L	0.19	0.76
2/13/2017	Final Eff	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.19 U	µg/L	0.19	0.76

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
2/13/2017	Final Eff	Priority Organic Pollutants	Hexachlorobenzene	0.95 U	µg/L	0.95	3.8
2/13/2017	Final Eff	Priority Organic Pollutants	Naphthalene	0.19 U	µg/L	0.19	0.76
2/13/2017	Final Eff	Priority Organic Pollutants	Nitrobenzene	1.9 U	µg/L	1.9	7.6
2/13/2017	Final Eff	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.95 U	µg/L	0.95	3.8
2/13/2017	Final Eff	Priority Organic Pollutants	Dimethyl phthalate	0.95 U	µg/L	0.95	3.8
2/13/2017	Final Eff	Priority Organic Pollutants	Di-n-octyl phthalate	0.95 U	µg/L	0.95	3.8
2/13/2017	Final Eff	Priority Organic Pollutants	Di-n-butyl phthalate	1.9 U	µg/L	1.9	7.6
2/13/2017	Final Eff	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.95 U	µg/L	0.95	3.8
2/13/2017	Final Eff	Priority Organic Pollutants	Anthracene	0.19 U	µg/L	0.19	0.76
2/13/2017	Final Eff	Priority Organic Pollutants	Acenaphthylene	0.19 U	µg/L	0.19	0.76
2/13/2017	Final Eff	Priority Organic Pollutants	Isophorone	0.95 U	µg/L	0.95	3.8
2/13/2017	Final Eff	Priority Organic Pollutants	2,4-Dinitrotoluene	0.95 U	µg/L	0.95	3.8
2/13/2017	Final Eff	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.95 U	µg/L	0.95	3.8
2/13/2017	Final Eff	Priority Organic Pollutants	Benzo(k)fluoranthene	0.19 U	µg/L	0.19	0.76
2/13/2017	Final Eff	Priority Organic Pollutants	Fluoranthene	0.19 U	µg/L	0.19	0.76
2/13/2017	Final Eff	Priority Organic Pollutants	Hexachlorobutadiene	2.9 U	µg/L	2.9	11
2/13/2017	Final Eff	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9 U	µg/L	1.9	7.6
2/13/2017	Final Eff	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9 U	µg/L	1.9	7.6
2/13/2017	Final Eff	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9 U	µg/L	2.9	11
2/13/2017	Final Eff	Priority Organic Pollutants	Phenanthrene	0.19 U	µg/L	0.19	0.76
2/13/2017	Final Eff	Priority Organic Pollutants	2,4-Dichlorophenol	0.95 U	µg/L	0.95	3.8
2/13/2017	Final Eff	Priority Organic Pollutants	2,4-Dimethylphenol	9.5 U	µg/L	9.5	38
2/13/2017	Final Eff	Priority Organic Pollutants	2,4-Dinitrophenol	14 UJ	µg/L	14	57
2/13/2017	Final Eff	Priority Organic Pollutants	2-Chloronaphthalene	0.95 U	µg/L	0.95	3.8
2/13/2017	Final Eff	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9 U	µg/L	2.9	11
2/13/2017	Final Eff	Priority Organic Pollutants	Benzo(a)anthracene	0.19 U	µg/L	0.19	0.76
2/13/2017	Final Eff	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.95 U	µg/L	0.95	3.8
2/13/2017	Final Eff	Priority Organic Pollutants	Diethyl phthalate	1.9 U	µg/L	1.9	7.6
2/13/2017	Final Eff	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.19 U	µg/L	0.19	0.76
2/13/2017	Final Eff	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.95 U	µg/L	0.95	3.8
2/13/2017	Final Eff	Priority Organic Pollutants	2,6-Dinitrotoluene	0.95 U	µg/L	0.95	3.8
2/13/2017	Final Eff	Priority Organic Pollutants	Acenaphthene	0.19 U	µg/L	0.19	0.76
2/13/2017	Final Eff	Priority Organic Pollutants	Benzo(a)pyrene	0.19 U	µg/L	0.19	0.76
2/13/2017	Final Eff	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	1.9 U	µg/L	1.9	7.6
2/13/2017	Final Eff	Priority Organic Pollutants	Fluorene	0.19 U	µg/L	0.19	0.76

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
2/13/2017	Final Eff	Priority Organic Pollutants	Hexachloroethane	2.9 U	µg/L	2.9	11
2/13/2017	Final Eff	Priority Organic Pollutants	Pyrene	0.19 U	µg/L	0.19	0.76
2/13/2017	Final Eff	Priority Organic Pollutants	Benzidine	95 U	µg/L	95	380
2/13/2017	Final Eff	Priority Organic Pollutants	Benzo(b)fluoranthene	0.19 U	µg/L	0.19	0.76
2/13/2017	Final Eff	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.19 U	µg/L	0.19	0.76
2/13/2017	Final Eff	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9 U	µg/L	2.9	11
2/13/2017	Final Eff	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38 U	µg/L	38	150
2/13/2017	Final Eff	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9 U	µg/L	2.9	11
2/13/2017	Final Eff	Priority Organic Pollutants	Butyl benzyl phthalate	0.95 U	µg/L	0.95	3.8
2/13/2017	Final Eff	Priority Organic Pollutants	Phenol	0.95 U	µg/L	0.95	3.8
2/13/2017	Final Eff	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.95 U	µg/L	0.95	3.8
2/13/2017	Final Eff	Priority Organic Pollutants	2-Chlorophenol	0.95 U	µg/L	0.95	3.8
2/13/2017	Final Eff	Priority Organic Pollutants	4-Nitrophenol	14 U	µg/L	14	57
2/13/2017	Final Eff	Nutrients	Temperature	21.6	C		
2/13/2017	Final Eff	Nutrients	Sample Depth	0.1	m		
2/13/2017	Final Eff	Nutrients	Dissolved Oxygen	86.6	%Sat		
2/13/2017	Final Eff	Nutrients	Specific Conductance	564	µmhos/cm		
2/13/2017	Final Eff	Nutrients	pH	6.7			
2/13/2017	Final Eff Grab	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	0.89 I	mg/L	0.2	2
2/13/2017	Final Eff Grab	Toxicology	Bioassay-Chron-Def-FW-Fish, NOEC	100	NOEC		
2/13/2017	Final Eff Grab	Toxicology	Bioassay-Chron-Def-FW-C.dubia, NOEC	100	NOEC		
2/13/2017	Final Eff Grab	Toxicology	Bioassay-Chron-Def-FW-Fish, IC25	100 L	IC25		
2/13/2017	Final Eff Grab	Toxicology	Bioassay-Chron-Def-FW-C.dubia, IC25	100 L	IC25		
2/13/2017	Final Eff Grab	Nutrients	Total-P	2.9	mg P/L	0.025	0.25
2/13/2017	Final Eff Grab	Nutrients	TSS	2 I	mg/L	2	10
2/13/2017	Final Eff Grab	Nutrients	NO2NO3-N	11	mg N/L	0.4	1
2/13/2017	Final Eff Grab	Nutrients	Ammonia-N	0.021	mg N/L	0.002	0.005
2/13/2017	Final Eff Grab	Nutrients	Kjeldahl Nitrogen	1.4 J	mg N/L	0.16	0.4
2/13/2017	Final Eff Grab	Nutrients	Organic Carbon	8.4	mg C/L	0.5	1
2/13/2017	Final Eff Grab	Nutrients	Temperature	21.6	C		
2/13/2017	Final Eff Grab	Nutrients	Dissolved Oxygen	86.6	%Sat		
2/13/2017	Final Eff Grab	Nutrients	Specific Conductance	564	µmhos/cm		
2/13/2017	Final Eff Grab	Nutrients	Sample Depth	0.1	m		
2/13/2017	Final Eff Grab	Nutrients	pH	6.7			
2/12/2017	Equip Blank	Nutrients	Organic Carbon	0.50 U	mg C/L	0.5	1

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
2/12/2017	Equip Blank	Nutrients	Kjeldahl Nitrogen	0.080 U	mg N/L	0.08	0.2
2/12/2017	Equip Blank	Nutrients	NO2NO3-N	0.004 U	mg N/L	0.004	0.01
2/12/2017	Equip Blank	Nutrients	Total-P	0.004 I	mg P/L	0.002	0.005
2/12/2017	Equip Blank	Nutrients	Ammonia-N	0.002 U	mg N/L	0.002	0.005
2/13/2017	Field Blank	Metals	Calcium	0.075 U	mg/L	0.075	0.3
2/13/2017	Field Blank	Metals	Selenium	0.20 U	µg/L	0.2	0.8
2/13/2017	Field Blank	Metals	Silver	0.010 U	µg/L	0.01	0.04
2/13/2017	Field Blank	Metals	Zinc	5.0 U	µg/L	5	20
2/13/2017	Field Blank	Metals	Arsenic	0.050 U	µg/L	0.05	0.2
2/13/2017	Field Blank	Metals	Cadmium	0.020 U	µg/L	0.02	0.08
2/13/2017	Field Blank	Metals	Nickel	0.20 U	µg/L	0.2	0.8
2/13/2017	Field Blank	Metals	Magnesium	0.040 U	mg/L	0.04	0.16
2/13/2017	Field Blank	Metals	Chromium	0.40 U	µg/L	0.4	1.6
2/13/2017	Field Blank	Metals	Lead	0.050 U	µg/L	0.05	0.2
2/13/2017	Field Blank	Metals	Copper	0.20 U	µg/L	0.2	0.8
2/13/2017	Field Blank	Metals	Iron	30 U	µg/L	30	120
2/13/2017	Field Blank	Metals	Sodium	0.50 U	mg/L	0.5	2
2/13/2017	Field Blank	Metals	Aluminum	3.0 U	µg/L	3	12
2/13/2017	Field Blank	Metals	Potassium	0.30 U	mg/L	0.3	1.2
2/13/2017	Field Blank	Nutrients	Chloride	0.20 U	mg Cl/L	0.2	0.5
2/13/2017	Field Blank	Nutrients	Fluoride	0.035 U	mg F/L	0.035	0.1
2/13/2017	Field Blank	Nutrients	Total-P	0.003 I	mg P/L	0.002	0.005
2/13/2017	Field Blank	Nutrients	Organic Carbon	0.50 U	mg C/L	0.5	1
2/13/2017	Field Blank	Nutrients	Color (true)	2.5 U	PCU	2.5	6
2/13/2017	Field Blank	Nutrients	Total Alkalinity	0.65 U	mg CaCO3/L	0.65	2.5
2/13/2017	Field Blank	Nutrients	NO2NO3-N	0.004 U	mg N/L	0.004	0.01
2/13/2017	Field Blank	Nutrients	Ammonia-N	0.002 U	mg N/L	0.002	0.005
2/13/2017	Field Blank	Nutrients	O-Phosphate-P	0.004 U	mg P/L	0.004	0.01
2/13/2017	Field Blank	Nutrients	Sulfate	0.20 U	mg SO4/L	0.2	0.5
2/13/2017	Field Blank	Nutrients	Kjeldahl Nitrogen	0.080 U	mg N/L	0.08	0.2
2/13/2017	Field Blank	Nutrients	Turbidity	0.10 U	NTU	0.1	0.1
2/13/2017	Field Blank	Pesticides	Alachlor	0.057 U	µg/L	0.057	0.23
2/13/2017	Field Blank	Pesticides	Parathion Ethyl	0.019 U	µg/L	0.019	0.076
2/13/2017	Field Blank	Pesticides	Malathion	0.0095 U	µg/L	0.0095	0.038
2/13/2017	Field Blank	Pesticides	Prometon	0.019 UJ	µg/L	0.019	0.076

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
2/13/2017	Field Blank	Pesticides	Atrazine	0.0095 U	µg/L	0.0095	0.038
2/13/2017	Field Blank	Pesticides	Fonofos	0.0095 U	µg/L	0.0095	0.038
2/13/2017	Field Blank	Pesticides	Metalaxyl	0.038 UJ	µg/L	0.038	0.15
2/13/2017	Field Blank	Pesticides	Metribuzin	0.019 U	µg/L	0.019	0.076
2/13/2017	Field Blank	Pesticides	Phorate	0.0047 U	µg/L	0.0047	0.019
2/13/2017	Field Blank	Pesticides	Ametryn	0.0095 U	µg/L	0.0095	0.038
2/13/2017	Field Blank	Pesticides	Butylate	0.019 U	µg/L	0.019	0.076
2/13/2017	Field Blank	Pesticides	Disulfoton	0.0047 U	µg/L	0.0047	0.019
2/13/2017	Field Blank	Pesticides	Ethoprop	0.0047 U	µg/L	0.0047	0.019
2/13/2017	Field Blank	Pesticides	Metolachlor	0.057 U	µg/L	0.057	0.23
2/13/2017	Field Blank	Pesticides	Prometryn	0.019 U	µg/L	0.019	0.076
2/13/2017	Field Blank	Pesticides	Simazine	0.0095 U	µg/L	0.0095	0.038
2/13/2017	Field Blank	Pesticides	Atrazine Desethyl	0.0095 U	µg/L	0.0095	0.038
2/13/2017	Field Blank	Pesticides	Atrazine Desisopropyl	0.0095 U	µg/L	0.0095	0.038
2/13/2017	Field Blank	Pesticides	Chlorpyrifos Methyl	0.0095 U	µg/L	0.0095	0.038
2/13/2017	Field Blank	Pesticides	Ethion	0.0095 U	µg/L	0.0095	0.038
2/13/2017	Field Blank	Pesticides	Naled	0.038 U	µg/L	0.038	0.15
2/13/2017	Field Blank	Pesticides	Acetaminophen	0.0040 U	µg/L	0.004	0.016
2/13/2017	Field Blank	Pesticides	Carbamazepine	4.0E-04 U	µg/L	0.0004	0.0016
2/13/2017	Field Blank	Pesticides	Demeton	0.023 U	µg/L	0.023	0.091
2/13/2017	Field Blank	Pesticides	Hexazinone	0.028 UJ	µg/L	0.028	0.11
2/13/2017	Field Blank	Pesticides	Mevinphos	0.0095 U	µg/L	0.0095	0.038
2/13/2017	Field Blank	Pesticides	Parathion Methyl	0.0095 U	µg/L	0.0095	0.038
2/13/2017	Field Blank	Pesticides	Sucralose	0.010 U	µg/L	0.01	0.04
2/13/2017	Field Blank	Pesticides	Bromacil	0.038 U	µg/L	0.038	0.15
2/13/2017	Field Blank	Pesticides	Chlorpyrifos Ethyl	0.0095 U	µg/L	0.0095	0.038
2/13/2017	Field Blank	Pesticides	Diazinon	0.0095 U	µg/L	0.0095	0.038
2/13/2017	Field Blank	Pesticides	Fenamiphos	0.028 UJ	µg/L	0.028	0.11
2/13/2017	Field Blank	Pesticides	Norflurazon	0.028 U	µg/L	0.028	0.11
2/13/2017	Field Blank	Pesticides	Azinphos Methyl	0.019 U	µg/L	0.019	0.076
2/13/2017	Field Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9 U	µg/L	1.9	7.5
2/13/2017	Field Blank	Priority Organic Pollutants	Phenanthrene	0.19 U	µg/L	0.19	0.75
2/13/2017	Field Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.93 U	µg/L	0.93	3.7
2/13/2017	Field Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.19 U	µg/L	0.19	0.75
2/13/2017	Field Blank	Priority Organic Pollutants	Dimethyl phthalate	0.93 U	µg/L	0.93	3.7

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
2/13/2017	Field Blank	Priority Organic Pollutants	Hexachlorobenzene	0.93 U	µg/L	0.93	3.7
2/13/2017	Field Blank	Priority Organic Pollutants	Nitrobenzene	1.9 U	µg/L	1.9	7.5
2/13/2017	Field Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.93 U	µg/L	0.93	3.7
2/13/2017	Field Blank	Priority Organic Pollutants	Acenaphthylene	0.19 U	µg/L	0.19	0.75
2/13/2017	Field Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.19 U	µg/L	0.19	0.75
2/13/2017	Field Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.93 U	µg/L	0.93	3.7
2/13/2017	Field Blank	Priority Organic Pollutants	Butyl benzyl phthalate	0.93 U	µg/L	0.93	3.7
2/13/2017	Field Blank	Priority Organic Pollutants	Chrysene	0.19 U	µg/L	0.19	0.75
2/13/2017	Field Blank	Priority Organic Pollutants	Fluorene	0.19 U	µg/L	0.19	0.75
2/13/2017	Field Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9 U	µg/L	1.9	7.5
2/13/2017	Field Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.8 U	µg/L	2.8	11
2/13/2017	Field Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	1.9 U	µg/L	1.9	7.5
2/13/2017	Field Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.19 U	µg/L	0.19	0.75
2/13/2017	Field Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.19 U	µg/L	0.19	0.75
2/13/2017	Field Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9 U	µg/L	1.9	7.5
2/13/2017	Field Blank	Priority Organic Pollutants	2,4-Dimethylphenol	9.3 U	µg/L	9.3	37
2/13/2017	Field Blank	Priority Organic Pollutants	2,4-Dinitrophenol	14 U	µg/L	14	56
2/13/2017	Field Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.19 U	µg/L	0.19	0.75
2/13/2017	Field Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.19 U	µg/L	0.19	0.75
2/13/2017	Field Blank	Priority Organic Pollutants	Di-n-octyl phthalate	0.93 U	µg/L	0.93	3.7
2/13/2017	Field Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.8 U	µg/L	2.8	11
2/13/2017	Field Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	0.93 U	µg/L	0.93	3.7
2/13/2017	Field Blank	Priority Organic Pollutants	2-Chlorophenol	0.93 U	µg/L	0.93	3.7
2/13/2017	Field Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.8 U	µg/L	2.8	11
2/13/2017	Field Blank	Priority Organic Pollutants	Benzidine	93 U	µg/L	93	370
2/13/2017	Field Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.93 U	µg/L	0.93	3.7
2/13/2017	Field Blank	Priority Organic Pollutants	Hexachloroethane	2.8 U	µg/L	2.8	11
2/13/2017	Field Blank	Priority Organic Pollutants	Phenol	0.93 U	µg/L	0.93	3.7
2/13/2017	Field Blank	Priority Organic Pollutants	2-Chloronaphthalene	0.93 U	µg/L	0.93	3.7
2/13/2017	Field Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	37 U	µg/L	37	150
2/13/2017	Field Blank	Priority Organic Pollutants	4-Nitrophenol	14 U	µg/L	14	56
2/13/2017	Field Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.19 U	µg/L	0.19	0.75
2/13/2017	Field Blank	Priority Organic Pollutants	Di-n-butyl phthalate	1.9 U	µg/L	1.9	7.5
2/13/2017	Field Blank	Priority Organic Pollutants	Diethyl phthalate	1.9 U	µg/L	1.9	7.5
2/13/2017	Field Blank	Priority Organic Pollutants	Pyrene	0.19 U	µg/L	0.19	0.75

Date Sampled	Site ID	Analysis Group	Component	Result	Units	MDL	PQL
2/13/2017	Field Blank	Priority Organic Pollutants	Anthracene	0.19 U	µg/L	0.19	0.75
2/13/2017	Field Blank	Priority Organic Pollutants	Fluoranthene	0.19 U	µg/L	0.19	0.75
2/13/2017	Field Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.8 U	µg/L	2.8	11
2/13/2017	Field Blank	Priority Organic Pollutants	Naphthalene	0.19 U	µg/L	0.19	0.75
2/13/2017	Field Blank	Priority Organic Pollutants	Pentachlorophenol	0.93 U	µg/L	0.93	3.7
2/13/2017	Field Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.93 U	µg/L	0.93	3.7
2/13/2017	Field Blank	Priority Organic Pollutants	2,4-Dichlorophenol	0.93 U	µg/L	0.93	3.7
2/13/2017	Field Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	0.93 U	µg/L	0.93	3.7
2/13/2017	Field Blank	Priority Organic Pollutants	2-Nitrophenol	0.93 U	µg/L	0.93	3.7
2/13/2017	Field Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.93 U	µg/L	0.93	3.7
2/13/2017	Field Blank	Priority Organic Pollutants	Acenaphthene	0.19 U	µg/L	0.19	0.75
2/13/2017	Field Blank	Priority Organic Pollutants	Hexachlorobutadiene	2.8 U	µg/L	2.8	11
2/13/2017	Field Blank	Priority Organic Pollutants	Isophorone	0.93 U	µg/L	0.93	3.7

EPA End Sheet

The Bioassay of Town of Baldwin WWTF effluent sampled on February 13, 15 and 17, 2017. 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 7 0 2 1 3	18 **B**	19 **S**	20 1

Remarks

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The Priority Pollutants Analysis of Town of Baldwin WWTF effluent sampled on February 13, 15 and 17, 2017. 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 7 0 2 1 3	18 **X**	19 **S**	20 1

Remarks

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Biological Analyses of Town of Baldwin WWTF effluent sampled on February 13, 15 and 17, 2017. 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 7 0 2 1 3	18 **S**	19 **S**	20 1

Remarks

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