

Effluent Quality Assessment

Hiawatha Condominiums WWTF

Putnam County

NPDES #FL0043389

Sampled August 15, 2011

October 2011

Re-Issued August 2012

Biology Section
Bureau of Laboratories
Division of Environmental Assessment and Restoration

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Hiawatha Condominiums WWTF, 116 Hiawatha Court, East Palatka, Putnam County, Florida, 32131. NPDES #FL0043389. Effluent grab samples for biological and chemical analyses for this facility were collected on August 15, 2011.

Introduction

Hiawatha Condominiums WWTF (wastewater treatment facility) is an advanced wastewater treatment facility which uses the activated-sludge process to treat domestic wastewater. (See Appendix F for detailed facility information provided by Courtney Gamble of FDEP Northeast District. Storet conductivity data provided by Eesa Ali of FDEP Northeast District.)

Methods

Samples were collected from the EFD-1 NPDES sampling point for Outfall D-001 by Sharon Piltz and Eesa Ali (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.

The pH of an aliquot of sample was adjusted by the addition of 0.1N sodium hydroxide from a pH of 4.2 S.U. to a pH of 6.9 S.U. for the bioassay tests. The AGP sample pH was adjusted from pH 4.1 S.U. to pH 7.6 S.U. by the addition of 0.1N sodium hydroxide.

The pH of the effluent as measured in the field was 6.0. S.U. Therefore, the pH (4.2 S.U.) of the effluent as received in the bioassay laboratory, suggests chemical activity was ongoing in the effluent after collection.

See Appendix A for the completed chain of custody form.

Results and Discussion

- **Toxicity Test Results**

  Tests were performed August 16 - 20, 2011.

Ceriodaphnia dubia 96-hour acute screening bioassay –	LC_{50} > 100%, 0%* mortality in (pH adjusted sample) 100% sample at 96 hours
Ceriodaphnia dubia 24-hour acute screening bioassay –	LC_{50} < 100%, 100%* mortality in (original sample) 100% sample at 24 hours
Cyprinella leedsi 96-hour acute screening bioassay –	LC_{50} > 100%, 30%* mortality in (pH adjusted sample) 100% sample at 96 hours
Cyprinella leedsi 24-hour acute screening bioassay –	LC_{50} < 100%, 100%* mortality in (original sample) 100% sample at 24 hours

  The pH adjusted aliquot of sample showed no toxicity to the *Ceriodaphnia dubia* test organisms at 96 hours, but did show low to moderate levels of toxicity to the *Cyprinella leedsi* test organisms. The cause of the observed mortality in the *Cyprinella leedsi* pH adjusted test was not determined.

  The original sample produced 100% mortality in both the *Ceriodaphnia dubia* and the *Cyprinella leedsi* tests. The cause of toxicity was contributed, at least in part, to the intolerance of the test organisms to the low pH (4.2 S.U.) of the sample.

  *NOTE: In a 96-hour acute screening test of 100% effluent, mortality of <20% provides confidence that the effluent meets the acute toxicity criterion of Florida's Surface Water Quality Standards (Rule 62-302.500 (1) (a) 4, F.A.C.). Mortality between 20-50% indicates low to moderate levels of toxicity, and

further action may be required. Mortality of >50% indicates that the effluent fails to meet the minimum requirement to discharge to waters of the state (Rule 62-4.244(3) (a), F.A.C.).

See Appendix B for bioassay bench sheets. See Appendix C for results of the last 20 standard reference toxicant (SRT) tests and the bench sheets and statistical analyses of the SRT tests that correspond to these facility tests. See Appendix D for test organism receipts.

- **Algal Growth Potential**
  The pH adjusted effluent Algal Growth Potential (AGP) was 17.1 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 phosphorus-limited (Miller, et. al., 1978).

  See Table 1 for AGP results and qualifiers.

- **Chemistry Results**
  Total residual chlorine and total ammonia were not detected in the effluent in the bioassay laboratory. The total ammonia concentration in the sample collected and preserved for chemical analysis was 0.03 mg N/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was < 0.02 mg N/L.

  Copper, nickel, and zinc were detected in the effluent at levels that comply with Class III fresh water quality criteria (62-302.530, F.A.C.). Chromium-III, fluoride, iron, and lead were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL). Aluminum, chloride, chlorophyll *a,* and sulfate were also detected in the effluent.

  See Table 1 for results of analytes detected in the effluent, and corresponding limits. See Appendix E for a complete list of chemical analyses performed.

Conclusion

The effluent sample collected from the EFD-1 NPDES sampling point for Outfall D-001 for this facility on August 15, 2011, was acutely toxic to the *Ceriodaphnia dubia* and *Cyprinella leedsi* test organisms, producing 100% mortality within 24 hours of test initiation. The toxicity noted in the original sample was attributed, at least in part, to the low pH of the sample. The pH-adjusted aliquot of effluent was not acutely toxic to the *C. dubia* test organisms, but showed low to moderate toxicity to the *C. leedsi* test organisms. The cause of toxicity noted in the *C. leedsi* pH-adjusted test was not determined. The pH-adjusted algal growth potential exceeded the "problem" threshold for fresh receiving waters, suggesting nutrient enrichment may be an issue. Effluent pH (5.95 S.U.; rounded to 6.0 S.U.) as measured in the field, decreased in the bioassay sample during the interval from collection to receipt in the bioassay laboratory; suggesting ongoing chemical activity in the effluent. Additional water quality samples did not exceed applicable water quality standards and/or permit conditions.

Table 1. Measured and predicted algal growth potential (AGP; mg dry weight/L) orthophosphate (OP) and total phosphorus (TP) limitation of the freshwater species *Pseudokirchneriella subcapitata* in samples collected from the Hiawatha Condominiums WWTF on August 15, 2011.

Hiawatha Condominiums WWTF					
Location	AGP (measured)	Predicted AGP (OP) ± 20%	Predicted AGP (TP) ± 20%	Inorganic N:P ratio	Total N:P ratio
Effluent	17.1	21.1 ± 4.2	73.1 ± 14.6	68.0	22.4

Table 2. Effluent limits, Class III Freshwater Criteria and chemical data for samples collected from the Hiawatha Condominiums WWTF facility on August 15, 2011.

Hiawatha Condominiums WWTF NPDES# FL0043389	Class III Criteria	Effluent Limits	Effluent	
Organic Constituents (µg/L)				
None Detected	-		None Detected	
Metals (µg/L unless otherwise noted)				
Aluminum	-	-	378	
Arsenic	≤ 50	-	0.25	U
Cadmium	≤ 0.4 b	-	0.05	U
Calcium (mg/L)	-	-	39.2	
Chromium-III	≤ 130.7 b	-	0.39	I
Copper	≤ 14.4 b	-	5.52	
Iron	≤ 1,000	-	120	I
Lead	≤ 6.1 b	-	0.3	I
Magnesium (mg/L)	-	-	16.6	
Mercury	≤ 0.012	-	0.12	U
Nickel	≤ 80.2 b	-	2.03	
Selenium	≤ 5.0	-	0.2	U
Silver	≤ 0.07	-	0.025	U
Zinc	≤ 184.3 b	-	58	
Nutrients (mg/L)				
Ortho-phosphate	-	-	0.049	
Total Phosphorus	-	≤ 2.0 s	0.17	
Total Ammonia	-	-	0.03	
Un-ionized Ammonia	≤ 0.02 s	≤ 0.02 s	< 0.02	c
Nitrate and Nitrite	-	-	3.3	
Total Kjeldahl Nitrogen	-	-	0.5	
Organic Nitrogen	-	-	0.47	c
Total Nitrogen	-	≤ 6.0 s	3.8	c
General Physical and Chemical Parameters				
Dissolved Oxygen (mg/L)	≥ 5.0	≥ 5.0	6.6	
pH (SU)	6.0 - 8.5	6.0 - 8.5	6.0	
Conductivity (µmhos/cm)	≤ 1,275	-	897	
Temperature (°C)	-	-	28.8	
Sample Depth (m)	-	-	0.2	
Total Residual Chlorine (mg/L)	≤ 0.01	-	0.03	UQ£
Chlorophyll *a* (µg/L) - Corrected	-	-	1.5	I
Phaeophytin (µg/L)	-	-	0.5	U
Total Suspended Solids (mg/L)	-	≤ 10.0 s	5	I
CBOD, 5 day (mg/L), N - inhibited	-	≤ 10.0 s	2.2	AJ
Chloride (mg/L)	-	-	150	
Fluoride (mg/L)	≤ 10.0	-	0.04	I
Sulfate (mg/L)	-		200	
Flow (MGD) (9/1/10 - 8/31/11)	-	≤ 0.036 a	0.0235	a
Hardness (mg $CaCO_3$)	-	-	166.24	c

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
s - Single sample
A - Value reported is the mean of two or more determinations
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J - Estimated value
Q - Sample held beyond normal holding time
U - Material analyzed for but not detected; value reported is the method detection limit
£ - measurement taken in the FDEP laboratory

Appendix A. Chain of Custody Form

NED F00511 **Florida Department of Environmental Protection *North East District* Field sheet**

Sample Project Hiawatha 341 LabRequest number 2011-08-09-30

Collected By: S.I.E.T. Date Collected: 8-15-11

Lab ID #	Storet# WBCS FL 20438	Site Name Hiawatha WWTP 3YI							Matrix: Water / Surface Fresh / Surface Salt / Effluent	Comments Air Temp ___ Wind Sp ___ Wind Dir ___		
Time	Total depth(m)	Sample depth(m)	Temp (C)	Conductivity (µmhos)	Salinity (%)	pH s.u.	D.O. mg/l	D.O. (%)	Secchi meters	Velocity ft./sec.	Tide Ebb/Flood/Slack	Turb NTU
09:40		.2	28.79	17	.44	5.15	6.56	85.3	>.2	N/A	1960	0.02

Grab/Composite Not applicable	Parameter/Method Horizontal Sampler(HS), Grab(G), Pole(P)		Preservation	Bottle/Suite #A/B/C,etc.	Initials
G / C / Na	Nutrients: NH_3, NO_2+ NO_3, TKN, TOC TP	☐HS ☑G ☐P	Ice& H_2SO_4 less than 2 pH*	A	EA
G / C / Na	Ortho Phosphorous	☐HS ☑G ☐P	Ice & .45µm filtered		
G / C / Na	BOD/CBOD	☐HS ☑G ☐P	Ice		
G / C / Na	Chlorophyll,Phaeophytin ½ secchi ½ tot depth	☐HS ☑G ☐P	Ice		
G / C / Na	Physical Aggregate:TSS,TDS,Turb.,Color,Alk,Cl,F,SO_4	☐HS ☑G ☐P	Ice		
G / C / Na	Metals: ICP,ICPMS	☐HS ☑G ☐P	Ice& HNO_3 less than 2 pH*		
G / C / Na	Other: T3X	☐HS ☑G ☐P	Ice/		
G / C / Na	Microbiology: Fecal Coliform	☐HS ☑G ☐P	Ice		

Lab ID #	Storet#	Site Name Blank							Matrix: Water / Surface Fresh / Surface Salt / Effluent DI	Comments		
Time	Total depth(m)	Sample depth(m)	Temp (C)	Conductivity (µmhos)	Salinity (%)	pH s.u.	D.O. mg/l	D.O. (%)	Secchi meters	Velocity ft./sec	Tide Ebb/Flood/Slack	Turb NTU
09.32												

Grab/Composite Not applicable	Parameter/Method Horizontal Sampler(HS), Grab(G), Pole(P)		Preservation	Bottle/Suite #A/B/C,etc.	Initials
G / C / Na	Nutrients: NH_3, NO_2+ NO_3, TKN, TOC TP	☐HS ☑G ☐P	Ice& H_2SO_4 less than 2 pH*	B	SP
G / C / Na	Ortho Phosphorous	☐HS ☑G ☐P	Ice & .45µm filtered	B	SP
G / C / Na	BOD/CBOD	☐HS ☐G ☐P	Ice		
G / C / Na	Chlorophyll,Phaeophytin ½ secchi ½ tot depth	☐HS ☐G ☐P	Ice		
G / C / Na	Physical Aggregate:TSS,TDS,Turb.,Color,Alk,Cl,F,SO_4	☐HS ☑G ☐P	Ice	B	SP
G / C / Na	Metals: ICP,ICPMS	☐HS ☑G ☐P	HNO_3 less than 2 pH*	B	SP
G / C / Na	Other:	☐HS ☐G ☐P	Ice/		
G / C / Na	Microbiology: Fecal Coliform	☐HS ☐G ☐P	Ice		

Lab ID #	Storet#	Site Name							Matrix: Water / Surface Fresh / Surface Salt / Effluent	Comments		
Time	Total depth(m)	Sample depth(m)	Temp (C)	Conductivity (µmhos)	Salinity (%)	pH s.u.	D.O. mg/l	D.O. (%)	Secchi meters	Velocity ft./sec	Tide Ebb/Flood/Slack	Turb NTU

Grab/Composite Not applicable	Parameter/Method Horizontal Sampler(HS), Grab(G), Pole(P)		Preservation	Bottle/Suite #A/B/C,etc.	Initials
G / C / Na	Nutrients: NH_3, NO_2+ NO_3, TKN, TOC, P	☐HS ☐G ☐P	Ice& H_2SO_4 less than 2 pH*		
G / C / Na	Ortho Phosphorous	☐HS ☐G ☐P	Ice & .45µm filtered		
G / C / Na	BOD/CBOD	☐HS ☐G ☐P	Ice		
G / C / Na	Chlorophyll,Phaeophytin ½ secchi ½ tot depth	☐HS ☐G ☐P	Ice		
G / C / Na	Physical Aggregate:TSS,TDS,Turb.,Color,Alk,Cl,F,SO_4	☐HS ☐G ☐P	Ice		
G / C / Na	Metals: ICP,ICPMS	☐HS ☐G ☐P	HNO_3 lesss than 2 pH*		
G / C / Na	Other:	☐HS ☐G ☐P	Ice/		
G / C / Na	Microbiology: Fecal Coliform	☐HS ☐G ☐P	Ice		

Relinquished	Date	Time	Shipping	Received	Date/Time
	8/15/11	1430	FEDEX		8-16-11 9:40a

*All acid preserved samples are with 2ml of (1to1 acid) H_2SO_4 Lot #_____ HNO_3 Lot #_____

Patrick O'Connor (PWO) / Jeremy Parrish (JP) / Chuck Plank (CP) / Jann Gruentzel (JG) / Sharon Piltz (SP) / Eesa Ali (EA) / Jake Mast (JM) / Bipin Adhyaru (BA) / Stephany Birkholz (SB)

FDEP Biology Laboratory - Acute Bioassay Bench Sheets

Facility: Hiawatha Condominiums WWTF
Address: 116 Hiawatha Court
City: East Palatka County: Putnum (32131)
Contact/District: Eesa Ali / Northeast
NPDES Permit #: FL 0043389
LIMS Job #: TLH-2011-08-16-25 LIMS Sample #: 1370984
Lims Data Entry: 8-30-11 MF Data Entry Verification: 09.01.11 - KC

Sample Collection: Date: 08.15.11 Time: 0940
Hold Time Start: Date: 08.15.11 Time: 0940

Comments:

Initial sample handling:
Instructions: Check yes or no. If yes is checked, complete blanks

PH adjustment: ☑ yes ☐ no Initial pH: 4.2 NaOH 0.1 N HCl ____ N 160 Drops mL Final pH: 6.9
Aeration: ☐ yes ☑ no Initial DO: ____mg/L Final DO: ____mg/L Duration: ____minutes Rate: ~____bubbles/min
Salinity adjusted (Test 1): ☐ yes ☑ no Initial Salinity: _____ Final Salinity: _____ Salts Hypersaline brine
Salinity adjusted (Test 2): ☐ yes ☑ no Initial Salinity: _____ Final Salinity: _____ Salts Hypersaline brine
Dechlorination: ☐ yes ☑ no _____mL of 0.025N Sodium Thiosulfate per liter of sample. Final TRC: _____

Sample Validation:
Instructions: Check yes or no. Fill in temperatures.

Temperature: Shipped ≤ 6°C ☑ Yes ☐ No — IF Hand Delivered: Cooling ☐ Yes ☐ No (received _____°C collected_____°C)
Holding Time: ≤ 36 Hours ☑ Yes ☐ No (Composite-end of collection; grab-when collected; 4 in 24 - time last sample collected)

Investigators' Signatures:	Initials:
Kate Cook	KC
Brian Alexander	BA
Marshall Faircloth	MF
Jamie Dowd	JD
REVIEWER: Lucy Miller	

Diluent/Control Batch#:	8.9.11	8.16.11							
Water Quality Parameters	20% DMW	Well Water	Moderately Hard Water	Salt Water ASW NSW Test 1	Salt Water ASW NSW Test 2	Other:	Original Sample	Measured by	Verified by
Field Total Residual Cl_2 (mg/L):	N/A	N/A	N/A	N/A	N/A	N/A	0.02	SP	KC
Lab Total Residual Cl_2 (mg/L):	<0.03	<0.03					<0.03	JD/KC	KC/MF
Alkalinity (mg/L as $CaCO_3$):	82	150					9	KC	KC/MF
Hardness (mg/L as $CaCO_3$):	83	143					159	KC	KC/MF
Total Ammonia (mg/L as N):	<0.017	<0.017					<0.017	BA	KC
Conductivity: ☑ µmhos ☐ mmhos	184	288					971	JD/KC	KC/MF
Salinity (ppth):									

V 1.8 1/13/10

Appendix B. continued

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #1370984 SOP#: TA 07 01 Test # 1 of 2

Test Species:
Batch #: 8.16.11 Age: <24hrs
- [x] *Ceriodaphnia dubia*
- [ ] *Cyprinella leedsi*
- [ ] *Pimephales promelas*
- [ ] *Menidia beryllina*
- [ ] *Americamysis bahia*
- [ ] Other:

Test Validation
Control Survival ≥ 90%: [x] Yes [ ] No
Temperature Range ≤ 3° C: [x] Yes [ ] No

Diluent (Batch #8.9.11)
- [ ] ASW
- [x] 20% DMW
- [ ] MHW
- [ ] Well

Test Type: [x] Acute [ ] Definitive
[ ] Static [x] Static Renewal [ ] Flow-Through

Test Duration:
- [ ] 48 hr
- [x] 96 hr
- [ ] ___hr

Test Started: Date 08.16.11 Time 1300

Test Ended: Date 8-20-11 Time 1010

Chamber Size 30 ml
Test Volume: 20 ml

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
CTRL.	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
pH adj 100% KC	A	A	5	0 5D	—	—	~~5~~ BA	—
	B	B	5	0 5D	—	—	—	—
	C	C	5	0 5D	—	—	—	—
	D	D	5	0 5D	—	—	—	—
pH 100%	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
Checked or Verified by:			KC	KC	BA	BA	BA	MF

Food
- [x] YCT Batch# 5.5.11
- [x] P. subcapitata Batch# 5.5.11
- [ ] Artemia Lot#_____

Feeding and Artemia Batch #
- [x] 0 hr___ [x] Prior to Test
- [ ] 24 hr___
- [x] 48 hr___ [ ] Prior to Renewal
- [ ] 72 hr___

Temperature Range (°C)
Incubator # 2
min. 23.9 max. 27.4 mean ~

Incubator #___
min.___ max.___ mean___

Waterbath #___
min.___ max.___ mean___

JD Room B246 JS
min. ~~23.9~~ 23.3 max. ~~27.4~~ 25.0 mean ~

Light Intensity (ft. candles): 50-100

Photoperiod (hours): 16 light, 8 dark

Loaded/ Verified by: KC JS
m = missing, d = dead, BR/AR Before/ After Renewal

Test Results:
Screening Tests: Report LC50 as >100%, =100%, or <100%.
% mortality in 100% sample: 100 % LC50: >100 %
Calculated LC50 (Definitive) 95% CI_____ Method_____

Comments: No mortality in pH adjusted example MF 8-20-11

V. 2.5 1-13-10

Substitute highest test concentration used if other than 100% (example: Ocean outfall tested at 30% concentration)

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Appendix B. continued

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample # 1370984 SOP#: TA 07 02 Test # 2 of 2

Test Species:
Batch #: 8.16.11 Age: 12 days
- ☐ *Ceriodaphnia dubia*
- ☑ *Cyprinella leedsi*
- ☐ *Pimephales promelas*
- ☐ *Menidia beryllina*
- ☐ *Americamysis bahia*
- ☐ Other:_____

Test Validation
Control Survival ≥ 90%: ☑ Yes ☐ No
Temperature Range ≤ 3° C: ☑ Yes ☐ No

Diluent (Batch # 8.16.11)
☐ ASW ☐ 20% DMW
☐ MHW ☑ Well

Test Type: ☑ Acute ☐ Definitive
☐ Static ☑ Static Renewal ☐ Flow-Through

Test Duration:
☐ 48 hr
☒ 96 hr
☐ ___hr

Test Started: Date 8.16.11 Time 1300

Test Ended: Date 8-20-11 Time 1010

Chamber Size 1000 ml
Test Volume: 400 ml

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Ctrl.	A	A1	5	5	5	5	5	5
	B	A2	5	5	5	5	5	5
	C	A3	5	5	5	5	5	5
	D	A4	5	3 2D	3	3	3	3
100%	A	A5	5	0 5D	-	-	-	-
	B	A6	5	0 5D	-	-	-	-
	C	A7	5	0 5D	-	-	-	-
	D	A8	5	0 5D	-	-	-	-
PH 100%	A	A9	5	4 1D	3 1D	3	3	3
	B	A10	5	3 2D	3	3	3	3
	C	A11	5	4 1D	4	4	3 1D	3
	D	A12	5	5	5	5	5	5
Checked or Verified by:			JD	JD	JD	JD	JD	MF

Food
- ☐ YCT Batch#_____
- ☐ P. subcapitata Batch#_____
- ☑ Artemia Lot# 23613

Feeding and Artemia Batch #
- ☑ 0 hr 142-11 ☑ Prior to Test
- ☐ 24 hr___
- ☑ 48 hr 144-11 ☑ Prior to Renewal
- ☐ 72 hr___

Temperature Range (°C)
Incubator # 2
min. 23.9 max. 27.4 mean ~

Incubator #___
min.___max.___mean___

Waterbath #___
min.___max.___mean___

JD Room B246 JD
min. 23.9 (23.0) max. 27.4 (25.0) mean ~

Light Intensity (ft. candles): 50-100

Photoperiod (hours): 16 light, 8 dark

Loaded/ Verified by: JD / JD
m = missing, d = dead, BR/AR Before/ After Renewal

Test Results:
Screening Tests: Report LC50 as >100%, =100%, or <100%.
% mortality in 100% sample: 20% LC50: >100%
Calculated LC50 (Definitive) 95% CI_____ Method_____
↓ PH adj. MF 8-20-11

Comments:
LC 50 < 100% in Non-adjusted H_2O.
MF 8-20-11

V. 2.5 1-13-10

Substitute highest test concentration used if other than 100% (example: Ocean outfall tested at 30% concentration)

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Appendix B. continued

FDEP Biology Laboratory - Bioassay Parameter Sheet

LIMS Sample # 1370984 Test # 1 of 2

Test Species:

- ☑ *Ceriodaphnia dubia*
- ☐ *Cyprinella leedsi*
- ☐ *Pimephales promelas*
- ☐ *Menidia beryllina*
- ☐ *Americamysis bahia*
- ☐ Other:_____

Test aerated: (if DO is < 4.0 mg/L)

☐ Yes ☑ No

Concentration	Replicate	Test Hour	pH (SU)	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity ☒ µmhos ☐ mmhos	Salinity* (ppth)
Ctrl	M	0 hr	8.0	25.9	8.3	184	
	–	24 hr	–	–	–	–	
	A	48 hr BR	8.0	24.1	7.7	213	
	M	48 hr AR	8.1	24.0	7.6	177	
		72 hr					
	A	96 hr	8.3	24.3	8.2	185	
100%	M	0 hr	4.2	25.3	7.9	971	
	A	24 hr	4.0	24.9	8.6	973	
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
pH 100%	M	0 hr	6.7	25.4	8.7	946	
	–	24 hr	–	–	–	–	
	A	48 hr BR	7.7	24.8	7.9	949	
	M	48 hr AR	7.2	24.8	6.4	1013	
		72 hr					
	A	96 hr	8.0	24.1	8.2	1040	
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					

*Measure/ record salinity for marine tests

Comments:

Measured By:
0 hr: JD
24 hr: KC
48 hr BR: BA
48 hr AR: BA
72 hr: –
96 hr: MF

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V. 2.3 1-13-10

Appendix B. continued

FDEP Biology Laboratory - Bioassay Parameter Sheet

LIMS Sample # 1370984 Test # 2 of 2

Test Species:

- ☐ Ceriodaphnia dubia
- ☑ Cyprinella leedsi
- ☐ Pimephales promelas
- ☐ Menidia beryllina
- ☐ Americamysis bahia
- ☐ Other:_____

Test aerated: (if DO is < 4.0 mg/L)

☐ Yes ☑ No

Concentration	Replicate	Test Hour	pH (SU)	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity ☒ µmhos ☐ mmhos	Salinity* (ppth)
Ctr 1	A	0 hr	7.8	25.9	8.6	288	
	B	24 hr	8.2	25.1	8.0	291	
	C	48 hr BR	8.4	25.5	8.1	290	
	C	48 hr AR	8.1	25.1	8.2	280	
	D	72 hr	8.1	24.0	6.7	283	
	A	96 hr	8.0	24.1	7.0	298	
100%	A	0 hr	4.8	25.5	8.2	977	
	B	24 hr	4.4	24.5	8.0	978	
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
pH 100%	A	0 hr	6.8	25.6	8.6	966	
	B	24 hr	6.0	25.2	7.6	980	
	C	48 hr BR	7.1	25.6	7.9	974	
	C	48 hr AR	7.3	24.7	7.4	968	
	D	72 hr	7.5	24.0	6.2	1005	
	A	96 hr	7.8	24.4	6.8	1034	
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					

*Measure/ record salinity for marine tests

Comments:

Measured By:
0 hr: JB
24 hr: JB
48 hr BR: JD
48 hr AR: JB
72 hr: JD
96 hr: MF

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V. 2.3 1-13-10

Appendix B. continued

Test ID: Hiawatha + Hart Point WWTF Dates: 8-16-11 / 8-20-11

METER / DEVICE	ID	SOP	Parameter	Method	v used
YSI Model 58 Dissolved Oxygen Meter	90H018262	TA06_04	Dissolved Oxygen	SM 4500 O G	✓
YSI DO Probe	5905	TA06_04	Dissolved Oxygen	SM 4500 O G	✓
Accumet AR-10 pH Meter	93312105	TA06_23	pH	SM 4500 H+	✓
Mettler-Toledo SevenMulti Conductivity Meter	SN 1225117049 Probe H04257	TA06_25	Conductivity Salinity	SM 2510 B SM 2520 B	✓
Denver Model 225 ISE with ammonia probe	SN K01377	TA06_17	Ammonia	SM 4500 NH3 F	✓
Traceable Thermometer	#1-SN101686412 #2-SN221295527 #3-SN240116020 #4-SN80361795 #5 SN61990624	TA06_05	Temperature	SM-2530B modified DEP SOP-001/01 FT1400	✓ #5
Hach Pocket Colorimeter II	05050C026378	TA06_22	Total Residual Chlorine	EPA 330.5 SM 4500 CL G	✓
Alkalinity (Hach Kit)	No SN	TA06_08	Alkalinity	SM 2320 B	✓
Hardness (Hach Kit)	No SN	TA06_09	Hardness	SM 2340 C	✓
OHAUS Balance 250D	1125481084	TA06_21 TA06_27	Weight	-	
S-Weights	BIO-S-WEIGHTS-01	NA	Balance check	-	

SM-2530B modified to allow use of electronic and non-mercury filled thermometers.

Insert other device information in blank spaces(if used). Test ID = Facility or SRTs (acute SRT–Chronic SRT)

8.19.11 BA

V 1.1 9/21/10 MF/jd

000072

Appendix C. SRT Bench Sheets and Statistical Analysis

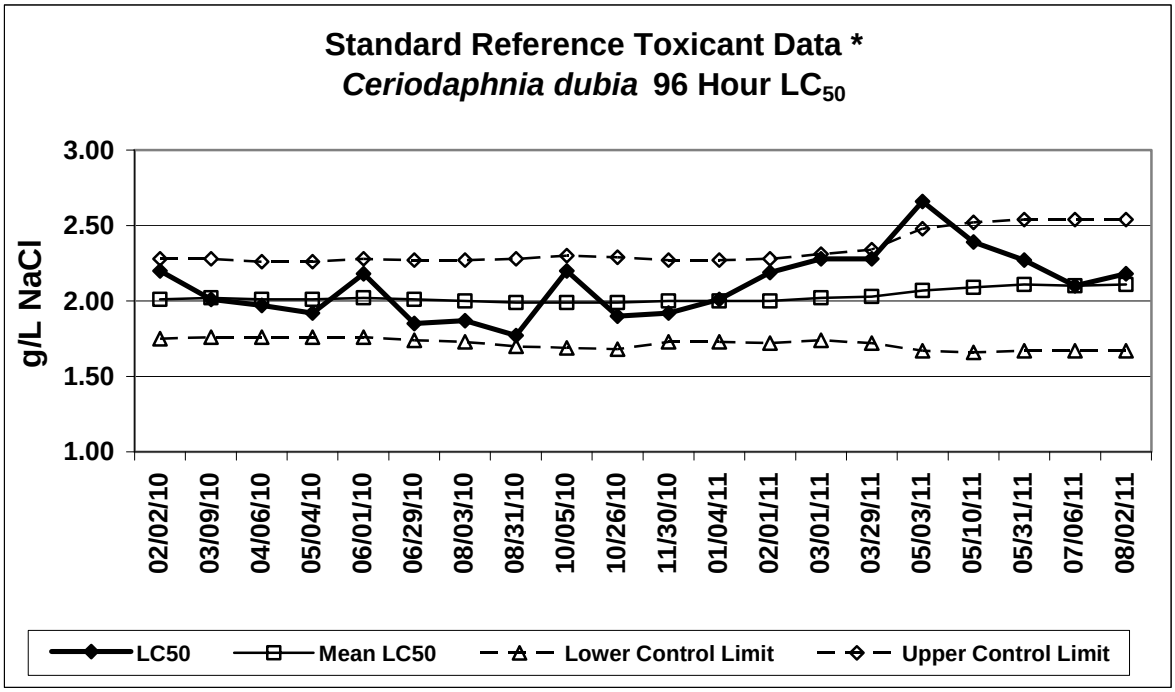
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 96-hour Acute Toxicity
Ceriodaphnia dubia (water flea) - Sodium Chloride (NaCl)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
02/02/10	2.20	2.01	0.13	1.75	2.28
03/09/10	2.01	2.02	0.13	1.76	2.28
04/06/10	1.97	2.01	0.12	1.76	2.26
05/04/10	1.92	2.01	0.12	1.76	2.26
06/01/10	2.18	2.02	0.13	1.76	2.28
06/29/10	1.85	2.01	0.13	1.74	2.27
08/03/10	1.87	2.00	0.14	1.73	2.27
08/31/10	1.77	1.99	0.14	1.70	2.28
10/05/10	2.20	1.99	0.15	1.69	2.30
10/26/10	1.90	1.99	0.15	1.68	2.29
11/30/10	1.92	2.00	0.14	1.73	2.27
01/04/11	2.01	2.00	0.14	1.73	2.27
02/01/11	2.19	2.00	0.14	1.72	2.28
03/01/11	2.28	2.02	0.14	1.74	2.31
03/29/11	2.28	2.03	0.15	1.72	2.34
05/03/11	2.66	2.07	0.20	1.67	2.48
05/10/11	2.39	2.09	0.21	1.66	2.52
05/31/11	2.27	2.11	0.22	1.67	2.54
07/06/11	2.10	2.10	0.22	1.67	2.54
08/02/11	2.18	2.11	0.22	1.67	2.54

Lower Control Limit = mean - 2 * Std Dev
Upper Control Limit = mean + 2 * Std Dev

CV = 10.29
EPA reference 75th quartile CV = 29%



Appendix C. continued

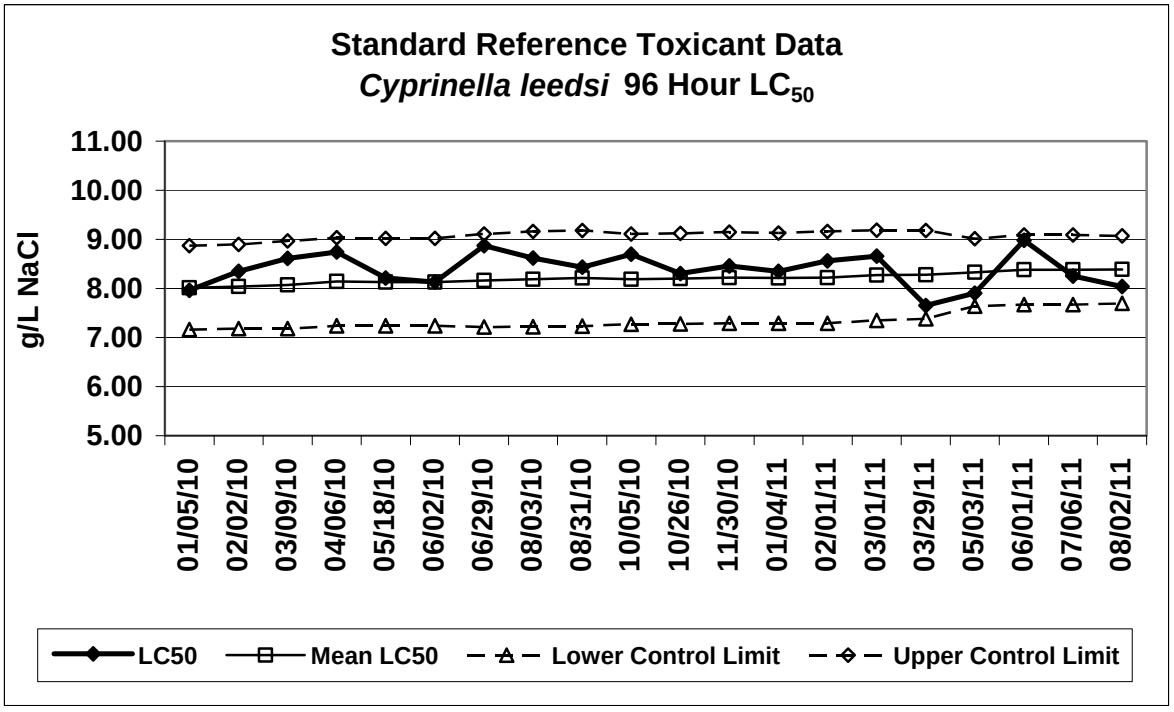
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 96-hour Acute Toxicity
Cyprinella leedsi (bannerfin shiner) - Sodium Chloride (NaCl)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
01/05/10	7.96	8.01	0.43	7.16	8.87
02/02/10	8.35	8.04	0.43	7.18	8.90
03/09/10	8.61	8.07	0.45	7.18	8.97
04/06/10	8.74	8.14	0.45	7.24	9.03
05/18/10	8.21	8.13	0.45	7.24	9.02
06/02/10	8.13	8.13	0.45	7.24	9.02
06/29/10	8.87	8.16	0.47	7.21	9.11
08/03/10	8.62	8.19	0.48	7.22	9.16
08/31/10	8.43	8.21	0.49	7.23	9.18
10/05/10	8.70	8.19	0.46	7.27	9.11
10/26/10	8.30	8.20	0.46	7.28	9.12
11/30/10	8.46	8.22	0.46	7.29	9.15
01/04/11	8.35	8.21	0.46	7.29	9.13
02/01/11	8.56	8.22	0.47	7.29	9.16
03/01/11	8.66	8.27	0.46	7.35	9.19
03/29/11	7.65	8.28	0.45	7.38	9.18
05/03/11	7.90	8.33	0.34	7.64	9.01
06/01/11	8.98	8.38	0.36	7.67	9.09
07/06/11	8.25	8.38	0.36	7.67	9.09
08/02/11	8.04	8.39	0.34	7.70	9.07

Lower Confidence Limit = mean - 2 * Std Dev
Upper Confidence Limit = mean + 2 * Std Dev

CV = 4.09
EPA reference 75th quartile CV = 19%



Appendix C. continued

FDEP Biology Laboratory - Acute SRT Bench Sheet

Method from EPA-821-R-02-012 except *H. azteca*

Test Organism: (check one)
- ☐ *Americamysis bahia* Method 2007.0 TA07.03
- ☐ *Menidia Beryllina* Method 2006.0 TA07.04
- ☐ *Hyalella azteca* Method 100.1 EPA-600-R-99-064
- ☑ *Ceriodaphnia dubia* Method 2002.0 TA07.01
- ☐ *Cyprinella leedsi* Method 2000.0 TA07.02
- ☐ *Pimephales promelas* Method 2000.0 TA07.02

Test Type: ☐ non-renewal ☑ renewal

Test Page 1 of 2

Diluent/ Batch #: DMW 17.28.11
Toxicant/ Batch#: NaCl 18.1.11
Organism Batch: 8.2.11 Age: <24 hrs
Test Beginning: Date: 8.2.11 Time: 1015
Test Ending: Date: 8.6.11 Time: 1030

Water Quality Parameters:	Diluent	SOP	Initials
Total Residual Cl_2 (mg/L):	<0.03	TA06_22	BA
Alkalinity (mg/L as $CaCO_3$):	78	TA06_08	KC
Hardness (mg.L as $CaCO_3$):	80	TA06_09	KC
Total Ammonia (mg/L as N):	<0.017	TA06_17	MF
Conductivity µmhos mmhos	173	TA06_25	KC
Salinity (ppth):	—	TA06_25	—

Food:	Batch
☑ YCT	5.5.11
☑ *P. subcapitata*	5.5.11
☐ Artemia Lot #	

Artemia Batch:
0 hr:
24 hr:
48 hr:
72 hr:

Chamber size: 30 mL
Test volume: 20 mL per replicate

Concentrations prepared by: KC
Test Incubated in: Incubator # 7 Waterbath # 5
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark

Temperature Range °C:(if used)
Incubator # 13 min 24.7 max 26.9 mean —
Waterbath # ___ min. ___ max. ___ mean ___
Room B246 min 24.8 max 25.9 mean —

Feeding: √as needed
- ☑ Before test
- ☑ 0 hr
- ☐ 24 hr
- ☑ 48 hr
- ☐ 72 hr

all species 2 hrs prior to test

mysids daily

all species except *H. azteca* 2 hr prior to renewal

H. azteca 0 hr and 48 hr

H. azteca		
0 hr	Alk	Hrd
Well		
100%		
96 hr	Alk	Hrd
Well		
100%		

Concentration µg/L mg/L g/L	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Control	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
1.5	A	A	5	4 1D	4	4	4	4
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
2.0	A	A	5	5	5	5	5	5
	B	B	5	5	4 1D	4 KC	2 2D	2
	C	C	5	5	4 1D	4	4	4
	D	D	5	5	5	5	5	5
2.5	A	A	5	5	3 2D	3	2 1D	2
	B	B	5	4 1D	3 1D	3	1 2D	1
	C	C	5	4 1D	1 3D	1	0 1D	—
	D	D	5	5	1 4D	1	0 1D	—
3.0	A	A	5	BA 3^{2D}	0 3D	0	—	—
	B	B	5	5	1 4D	1	1	0 1D
	C	C	5	4 1D	0 4D	0	—	—
	D	D	5	4 1D	0 4D	0	—	—
4.0	A	A	5	0 5D				
	B	B	5	0 5D				
	C	C	5	0 5D				
	D	D	5	0 5D				
Organisms loaded by: KC		Checked by: DA		BA	KC	KC	BA	JD
Loading Verified by: BA		AR = after renewal						

m = missing d = dead BR = before renewal hr = hour

Investigators' Signatures
Kara Clark
Brea Aldeb
Jennifer Daniel
Marshall Faircloth

Reviewer: Liz Miller

Comments:

Method: TSK

Statistics: LC50	95% confidence intervals Lower	Upper
48 hour: 2.55	2.35	2.77
96 hour: 2.18	2.05	2.33

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Revised 7/15/2008 mf

Appendix C. continued

FDEP Biology Laboratory - Acute SRT Bench Sheet
0-96 hour parameters

Methods from EPA-821-R-02-012 except *H. azteca*

Test Page 2 of 2

Test Organism: (check one)
- ☐ *Americamysis bahia* Method 2007.0 TA07.03
- ☐ *Menidia Beryllina* Method 2006.0 TA07.04
- ☐ *Hyalella azteca* Method 100.1 EPA-600-R-99-064
- ☑ *Ceriodaphnia dubia* Method 2002.0 TA07.01
- ☐ *Cyprinella leedsi* Method 2000.0 TA07.02
- ☐ *Pimephales promelas* Method 2000.0 TA07.02

Test Beginning: Date: 8.2.11 Time: 1015
Test Ending: Date: 8.6.11 Time: 1030

Test Type: ☐ non-renewal ☑ renewal

hr = hour AR = after renewal BR = before renewal

Concentration µg/L mg/L g/L	Replicate	Test Hour	pH (SU)	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity ☐ µmhos ☑ mmhos	Salinity (ppth)
Control	M	0 hr	8.0	25.7	KC 8.8 8.4	0.173	
	—	24 hr	—	—	—	—	
	A	48 hr BR	8.0	24.0	7.8	0.199	
	M	48 hr AR	8.1	24.0	8.2	0.179	
	—	72 hr	—	—	—	—	
	M	96 hr	8.1	24.0	7.6	0.220	
1.5	M	0 hr	8.1	25.25 KC	8.5	2.87	
	—	24 hr	—	—	—	—	
	A	48 hr BR	8.2	24.0	7.7	3.03	
	M	48 hr AR	8.2	24.0	7.9	2.90	
	—	72 hr	—	—	—	—	
	M	96 hr	8.1	24.1	7.7	3.06	
2.0	M	0 hr	8.1	25.2	8.5	3.77	
	—	24 hr	—	—	—	—	
	A	48 hr BR	8.2	24.0	8.1	4.17	
	M	48 hr AR	8.2	24.0	7.9	3.76	
	—	72 hr	—	—	—	—	
	M	96 hr	8.1	24.1	7.8	4.03	
2.5	M	0 hr	8.1	24.8	8.5	4.69	
	—	24 hr	—	—	—	—	
	A	48 hr BR	8.2	24.0	8.2	4.96	
	M	48 hr AR	8.2	24.0	7.8	4.64	
	—	72 hr	—	—	—	—	
	M	96 hr	8.1	24.0	8.0	5.12	
3.0	M	0 hr	8.1	24.5	8.5	5.49	
	—	24 hr	—	—	—	—	
	A	48 hr BR	8.2	24.0	8.1	6.44	
	M	48 hr AR	8.2	24.0	7.8	5.46	
		72 hr	—	—	—	—	
	M	96 hr	8.1	24.1	7.7	6.29	
4.0	M	0 hr	8.1	24.0	8.6	7.14	
	A	24 hr	8.1	24.0	8.6	8.07	
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					

Investigators Signatures
Kaia Ord
Bruce Hebb
Marshall Faircloth

Reviewed By: Lisa Miller

Measured by:
0 hr: KO
24 hr: BH
48 hr BR: KC
48 hr AR: KC
72 hr:
96 hr: JD

Measure/record salinity for marine tests

Comments: Parameters for Replicate C in the 2.5 g/L concentration was inadvertently not measured @ 72 hours. MF 8-15-11 MF

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Revised 07/15/2008 MF

Appendix C. continued

FDEP Biology Laboratory - Acute SRT Bench Sheet

Method from EPA-821-R-02-012 except *H. azteca*

Test Organism: (check one)
- ☐ *Americamysis bahia* Method 2007.0 TA07.03
- ☐ *Menidia Beryllina* Method 2006.0 TA07.04
- ☐ *Hyalella azteca* Method 100.1 EPA-600-R-99-064
- ☐ *Ceriodaphnia dubia* Method 2002.0 TA07.01
- ☒ *Cyprinella leedsi* Method 2000.0 TA07.02
- ☐ *Pimephales promelas* Method 2000.0 TA07.02

Test Type: ☐ non-renewal ☒ renewal

Test Page 1 of 2

Diluent/ Batch #: Well / 8.1.11
Toxicant/ Batch#: NaCl / 8.1.11
Organism Batch: 8.2.11 Age: 14 days
Test Beginning: Date: 8.2.11 Time: 1315
Test Ending: Date: 8.6.11 Time: 1100

Water Quality Parameters:	Diluent	SOP	Initials
Total Residual Cl_2 (mg/L):	<0.03	TA06_22	KC
Alkalinity (mg/L as $CaCO_3$):	143	TA06_08	KC
Hardness (mg.L as $CaCO_3$):	134	TA06_09	KC
Total Ammonia (mg/L as N):	<0.017	TA06_17	BA
Conductivity: µmhos / mmhos	278	TA06_25	JD
Salinity (ppth):	—	TA06_25	—

Food:	Batch
☐ YCT	
☐ *P. subcapitata*	
☒ Artemia Lot # 23108 13	Artemia Batch:

Artemia Batch:
- 0 hr: 1330-11
- 24 hr:
- 48 hr: 132-11
- 72 hr:

Chamber size: 100 mL
Test volume: 400 mL per replicate

Concentrations prepared by: JD
Temperature Range °C: (if used)
Test Incubated in: Incubator # 3 Waterbath # — Incubator # 3 min. 24.7 max. 26.9 mean —
Light Intensity: 50-100 Ft. candles
Waterbath # ___ min. ___ max. ___ mean ___
Photoperiod: 16 hours Light / 8 hours dark
Room B246 min. 24.8 max. 25.9 mean —

Feeding: √as needed
- ☑ Before test
- ☐ 0 hr
- ☐ 24 hr
- ☑ 48 hr
- ☐ 72 hr

all species 2 hrs prior to test

mysids daily

all species except *H. azteca* 2 hr prior to renewal

H. azteca 0 hr and 48 hr

Concentration µg/L mg/L (circle)	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Control	A	A1	10	9 1D	9	9	9	9
	B	A2	10	10	10	10	10	10
6	A	A3	10	9 1D	8 1D	8	7 1D	7
	B	A4	10	7 3D	7	7	7	7
7	A	A5	10	7 3D	7	7	6 1D	6
	B	A6	10	8 2D	8	8	8	7 1D
8	A	A7	10	6 4D	6	6	6	6
	B	A8	10	7 3D	6 1D	6	6	6
9	A	A9	10	1 9D	1	1	1	1
	B	A10	10	3 7D	2 1D	2	2	2
10	A	A11	10	0 10D	—	—	—	—
	B	A12	10	~~1 9D~~ 1 8D	2	2	2	1 1D

H. azteca		
0 hr	Alk	Hrd
Well		
100%		
96 hr	Alk	Hrd
Well		
100%		

Organisms loaded by: JD Checked by: JD JD JD JD JD JD
Loading Verified by: BA
AR = after renewal
m = missing d = dead BR = before renewal hr = hour

Investigators' Signatures
James Daniels
Brooke Hunter
Kara Cox
Marshall Faircloth

Reviewer: Liz Miller

Comments:

Method: TSK

Statistics: LC50	95% confidence intervals Lower	Upper
48 hour: 8.16	7.74	8.60
96 hour: ~~7.79~~ 8.04 KC	~~7.40~~ 7.34	~~8.56~~ 8.80

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Revised 7/15/2008 mf

Appendix C. continued

FDEP Biology Laboratory - Acute SRT Bench Sheet
0-96 hour parameters

Methods from EPA-821-R-02-012 except *H. azteca*

Test Page 2 of 2

Test Organism: (check one)
- ☐ *Americamysis bahia* Method 2007.0 TA07.03
- ☐ *Menidia Beryllina* Method 2006.0 TA07.04
- ☐ *Hyalella azteca* Method 100.1 EPA-600-R-99-064
- ☐ *Ceriodaphnia dubia* Method 2002.0 TA07.01
- ☒ *Cyprinella leedsi* Method 2000.0 TA07.02
- ☐ *Pimephales promelas* Method 2000.0 TA07.02

Test Beginning: Date: 8.2.11 Time: 1315
Test Ending: Date: 8.6.11 Time: 1100

Test Type: ☐ non-renewal ☒ renewal

hr = hour AR = after renewal BR = before renewal

Concentration µg/L mg/L (circle)	Replicate	Test Hour	pH (SU)	Temperature (° C)	Dissolved Oxygen (mg/L)	Conductivity ☐ µmhos ☒ mmhos	Salinity (ppth)
Control	A	0 hr	7.8	25.2	8.2	0.278	
	B	24 hr	7.7	24.5	7.6	0.288	
	A	48 hr BR	8.2	25.4	7.0	0.308	
	A	48 hr AR	7.8	25.8	7.3	0.292	
	B	72 hr	8.0	25.1	6.5	0.281	
	A	96 hr	8.0	25.9	6.4	0.353	
6	A	0 hr	8.0	25.9	7.7	10.8	
	B	24 hr	7.9	24.5	7.4	10.5	
	A	48 hr BR	8.2	25.6	6.7	11.1	
	A	48 hr AR	7.9	25.9	7.1	10.9	
	B	72 hr	8.0	25.4	6.3	11.2	
	A	96 hr	8.1	25.8	6.9	9.92	
7	A	0 hr	8.0	25.9	7.8	13.0	
	B	24 hr	7.9	24.9	7.3	12.7	
	A	48 hr BR	8.2	25.5	6.8	13.3	
	A	48 hr AR	8.0	25.8	6.8	12.9	
	B	72 hr	8.0	24.9	6.4	12.6	
	A	96 hr	8.1	25.8	6.9	13.0	
8	A	0 hr	8.0	25.9	7.8	14.4	
	B	24 hr	7.9	24.7	7.0	14.2	
	A	48 hr BR	8.2	25.9	6.7	14.6	
	A	48 hr AR	8.0	25.7	6.8	14.4	
	B	72 hr	7.9	25.9	6.2	14.5	
	A	96 hr	8.1	25.9	6.7	14.6	
9	A	0 hr	8.0	25.9	7.7	16.1	
	B	24 hr	7.9	24.6	6.9	15.9	
	A	48 hr BR	8.2	25.4	6.6	16.7	
	A	48 hr AR	8.0	25.6	6.9	16.1	
	B	72 hr	7.9	25.8	5.7	15.9	
	A	96 hr	8.1	25.9	6.7	16.3	
10	A	0 hr	8.0	25.9	7.5	18.0	
	B	24 hr	7.9	25.3	6.2	17.9	
	B	48 hr BR	8.2	24.9	6.8	18.1	
	B	48 hr AR	8.0	25.9	7.0	18.1	
	B	72 hr	8.1	25.6	6.4	17.8	
	B	96 hr	8.2	25.6	6.8	18.1	

Investigators Signatures
James Daniels
Brooke Hollis
Kara Lidy
Marshall Faircloth

Reviewed By: Tiffany Miller

Measured by:
0 hr: JD
24 hr: JD
48 hr BR: JD
48 hr AR: JD
72 hr: JD
96 hr: JD

Measure/record salinity for marine tests

Comments:

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Revised 07/15/2008 MF

Appendix C. continued

***Ceriodaphnia dubia* Acute Standard Reference Toxicant Test**

DATE: 8/02/201 DURATION: 96 hr TOXICANT : NaCl
SPECIES: *Ceriodaphnia dubia*

RAW DATA: Concentration (g/L)	Number Exposed	Mortalities
.00	20	0
1.50	20	1
2.00	20	4
2.50	20	17
3.00	20	20
4.00	20	20

SPEARMAN-KARBER TRIM: 5.00%

SPEARMAN-KARBER ESTIMATES: LC50: 2.18
95% LOWER CONFIDENCE: 2.05
95% UPPER CONFIDENCE: 2.33

***Cyprinella leedsi* Acute Standard Reference Toxicant Test**

DATE: 8/2/11 DURATION: 96 h TOXICANT : NaCl
SPECIES: *Cyprinella leedsi*

RAW DATA: Concentration (g/L)	Number Exposed	Mortalities
.00	20	1
6.00	20	6
7.00	20	7
8.00	20	8
9.00	20	17
10.00	20	19

SPEARMAN-KARBER TRIM: 26.32%

SPEARMAN-KARBER ESTIMATES: LC50: 8.04
95% LOWER CONFIDENCE: 7.34
95% UPPER CONFIDENCE: 8.80

NOTE: MORTALITY PROPORTIONS WERE NOT MONOTONICALLY INCREASING.
ADJUSTMENTS WERE MADE PRIOR TO SPEARMAN-KARBER ESTIMATION.

Appendix D. Test Organism Receipt

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Shipping Date: 8/1/11

Ship to: FDEP

P.O. No: _____

Species	Quantity	Age	Brood/Lot Number	Temp. (°C)	pH (S.U.)	Salinity (‰)
Mysidopsis bahia	150 ac	4 DAYS	MB 110728	25	7.9	20
Menidia beryllina	150 ac	12 DAYS	SS 110720	25	7.9	20
						Hardness mg/L
Cyprinella leedsi	150 ac	13 DAYS	CL 110719	25	7.8	80
Pimephales promelas	150 ac	7 DAYS	FM 110725	25	7.8	80
Ceriodaphnia dubia						
Daphnia magna						
YCT						
P. subcapitata						

Packed by: PM

Shipped Via: Fed Ex

Notes: _____

Thank you for your order.

4569 Samuel Street · Sarasota, FL 34233 · Tel: 941-925-3594 · Fax: 941-922-3874 · Web: www.biologylab.com

Appendix D. continued

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Shipping Date: 8/15/11

Ship to: FDEP

P.O. No: _____

Species	Quantity	Age	Brood/Lot Number	Temp. (°C)	pH (S.U.)	Salinity (‰)
Mysidopsis bahia						
Menidia beryllina						
						Hardness mg/L
Cyprinella leedsi	100 ac	11 DAYS	CL110804	25	7.8	80
Pimephales promelas						
Ceriodaphnia dubia						
Daphnia magna						
YCT						
P. subcapitata						

Packed by: PM

Shipped Via: Fed Ex

Notes: _____

Thank you for your order.

4569 Samuel Street · Sarasota, FL 34233 · Tel: 941-925-3594 · Fax: 941-922-3874 · Web: www.biologylab.com

Appendix E. Chemical Analyses performed on the effluent from the Hiawatha Condominiums WWTF facility Outfall D-001, sampled on August 15, 2011.

Date	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
8/15/2011 9:40	Effluent	AGP/LN	Algal Growth Potential	17.1		mg DryWt/L	0.3	0.9
8/15/2011 9:40	Effluent	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	1.5	I	ug/L	0.69	2.1
8/15/2011 9:40	Effluent	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	2.2	AJ	mg/L	0.2	2
8/15/2011 9:40	Effluent	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.5	U	ug/L	0.5	1.5
8/15/2011 9:40	Effluent	Overflow	Fecal Coliforms-Membrane Filter	13	B	cfu/100 mL	1.6	1.6
8/15/2011 9:40	Effluent	Toxicology	Bioassay-Acute-Screen-FW-Fish, LC50	100	K	LC50		
8/15/2011 9:40	Effluent	Toxicology	Bioassay-Acute-Screen-FW-C.dubia, LC50	100	K	LC50		
8/15/2011 9:40	Effluent	Toxicology	Bioassay-Acute-Screen-FW-Fish,LC50-pHadj	100	L	LC50		
8/15/2011 9:40	Effluent	Toxicology	Bioassay-Acute-Scrn-FW-Cdubia,LC50-pHadj	100	L	LC50		
8/15/2011 9:40	Effluent	Metals	Aluminum	378		ug/L	5	20
8/15/2011 9:40	Effluent	Metals	Calcium	39.2		mg/L	0.075	0.3
8/15/2011 9:40	Effluent	Metals	Chromium	0.39	I	ug/L	0.3	1.2
8/15/2011 9:40	Effluent	Metals	Copper	5.52		ug/L	0.5	1
8/15/2011 9:40	Effluent	Metals	Sodium	116		mg/L	0.5	2
8/15/2011 9:40	Effluent	Metals	Iron	120	I	ug/L	30	120
8/15/2011 9:40	Effluent	Metals	Selenium	0.2	U	ug/L	0.2	0.8
8/15/2011 9:40	Effluent	Metals	Cadmium	0.05	U	ug/L	0.05	0.2
8/15/2011 9:40	Effluent	Metals	Arsenic	0.25	U	ug/L	0.25	1
8/15/2011 9:40	Effluent	Metals	Mercury	0.12	U	ug/L	0.12	0.5
8/15/2011 9:40	Effluent	Metals	Lead	0.3	I	ug/L	0.2	0.8
8/15/2011 9:40	Effluent	Metals	Nickel	2.03		ug/L	0.25	1
8/15/2011 9:40	Effluent	Metals	Silver	0.025	U	ug/L	0.025	0.1
8/15/2011 9:40	Effluent	Metals	Zinc	58		ug/L	5	20
8/15/2011 9:40	Effluent	Metals	Magnesium	16.6		mg/L	0.04	0.16
8/15/2011 9:40	Effluent	Nutrients	Total-P	0.17		mg P/L	0.005	0.05
8/15/2011 9:40	Effluent	Nutrients	O-Phosphate-P	0.049		mg P/L	0.004	0.01
8/15/2011 9:40	Effluent	Nutrients	TSS	5	I	mg/L	2	10
8/15/2011 9:40	Effluent	Nutrients	Fluoride	0.04	I	mg F/L	0.035	0.1
8/15/2011 9:40	Effluent	Nutrients	Alkalinity	0.65	U	mg CaCO3/L	0.65	2.5
8/15/2011 9:40	Effluent	Nutrients	Kjeldahl Nitrogen	0.5		mg N/L	0.08	0.2

Appendix E. continued

Date	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
8/15/2011 9:40	Effluent	Nutrients	Ammonia-N	0.03		mg N/L	0.01	0.02
8/15/2011 9:40	Effluent	Nutrients	Organic Carbon	3.4	I	mg C/L	1	5
8/15/2011 9:40	Effluent	Nutrients	Sulfate	200		mg SO4/L	2	5
8/15/2011 9:40	Effluent	Nutrients	Chloride	150		mg Cl/L	2	5
8/15/2011 9:40	Effluent	Nutrients	NO2NO3-N	3.3		mg N/L	0.04	0.1
8/15/2011 9:40	Effluent	Field Parameter	pH	5.95				
8/15/2011 9:40	Effluent	Field Parameter	Temperature	28.79		C		
8/15/2011 9:40	Effluent	Field Parameter	Sample Depth	0.2		m		
8/15/2011 9:40	Effluent	Field Parameter	Dissolved Oxygen	6.56		mg/L		
8/15/2011 9:40	Effluent	Field Parameter	Specific Conductance	897		umhos/cm		
8/15/2011 9:32	Blank	Metals	Cadmium	0.05	U	ug/L	0.05	0.2
8/15/2011 9:32	Blank	Metals	Lead	0.2	U	ug/L	0.2	0.8
8/15/2011 9:32	Blank	Metals	Magnesium	0.04	U	mg/L	0.04	0.16
8/15/2011 9:32	Blank	Metals	Silver	0.025	U	ug/L	0.025	0.1
8/15/2011 9:32	Blank	Metals	Arsenic	0.25	U	ug/L	0.25	1
8/15/2011 9:32	Blank	Metals	Nickel	0.25	U	ug/L	0.25	1
8/15/2011 9:32	Blank	Metals	Mercury	0.12	U	ug/L	0.12	0.5
8/15/2011 9:32	Blank	Metals	Chromium	0.3	U	ug/L	0.3	1.2
8/15/2011 9:32	Blank	Metals	Calcium	0.075	U	mg/L	0.075	0.3
8/15/2011 9:32	Blank	Metals	Iron	30	U	ug/L	30	120
8/15/2011 9:32	Blank	Metals	Sodium	0.5	U	mg/L	0.5	2
8/15/2011 9:32	Blank	Metals	Aluminum	5	U	ug/L	5	20
8/15/2011 9:32	Blank	Metals	Selenium	0.2	U	ug/L	0.2	0.8
8/15/2011 9:32	Blank	Metals	Zinc	5	U	ug/L	5	20
8/15/2011 9:32	Blank	Metals	Copper	0.5	U	ug/L	0.5	1
8/15/2011 9:32	Blank	Nutrients	Kjeldahl Nitrogen	0.08	U	mg N/L	0.08	0.2
8/15/2011 9:32	Blank	Nutrients	Organic Carbon	1	U	mg C/L	1	5
8/15/2011 9:32	Blank	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
8/15/2011 9:32	Blank	Nutrients	Sulfate	0.2	U	mg SO4/L	0.2	0.5
8/15/2011 9:32	Blank	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
8/15/2011 9:32	Blank	Nutrients	NO2NO3-N	0.004	U	mg N/L	0.004	0.01
8/15/2011 9:32	Blank	Nutrients	Chloride	0.2	U	mg Cl/L	0.2	0.5
8/15/2011 9:32	Blank	Nutrients	Fluoride	0.035	U	mg F/L	0.035	0.1
8/15/2011 9:32	Blank	Nutrients	Total-P	0.004	U	mg P/L	0.004	0.01
8/15/2011 9:32	Blank	Nutrients	Alkalinity	0.65	U	mg CaCO3/L	0.65	2.5

Appendix F. Facility Summary, Effluent Limits, and Permit Violations Recorded on Discharge Monitoring Report

Hiawatha Condominuims WTTF– FL0043389 – March-2011

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: **Courtney Gamble**	**Contact Number:** **904-256-1625**
Facility Name (as it appears on permit): **Hiawatha Condominiums WWTF**	**Current Name:** same
NPDES Permit Number: FL0043389	**Permit Expiration Date:** January 9, 2012
Physical Address: 116 Hiawatha Court East Palatka, FL 32131	
District: Northeast	**County:** Putnam
Function of Facility: Domestic wastewater treatment	
Facility Type: Domestic Wastewater Treatment Plant Publicly-owned treatment works Standard Industrial Classification Code: 4952	**Permitted Capacity (MGD):** 0.036 MGD
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): **Outfall D-001 – November 30, 2009 to November 30, 2010 –** **Annual average flow at the end of November 2010 = 0.023 MGD**	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months): **There is no separate reuse outfall at this facility**	
Description of type of Discharge: ☐ **Continuous** ☒ **Intermittent** ☐ **Seasonal** ☐ **Rainfall Dependent** ☐ **Other, please specify**	

Appendix F. (cont.)

Hiawatha Condominuims WTTF– FL0043389 – March-2011

Description of Sampling Location(s) - actual permit designation of permitted sampling point(s):

EFA-1 – Effluent sampling point immediately after disinfection, but before dechlorination.
EFD-1 – Effluent sampling point immediately after dechlorination and prior to discharge to the St. Johns River.
CAL-1 – Calculated value based on difference between influent flow and total drainfield flow. Influent flows measure by lift station elapsed time meter (ETM) readings; total effluent discharges to drainfield measured by summation of inline flowmeter readings to each of 3 absorption fields.

Description of Permitted Outfall(s): excerpted from permit revision April 2008

Surface Water Discharge:

An existing 0.036 MGD annual average daily flow (AADF) permitted discharge to St. Johns River (Class III fresh waters) at discharge location (D-001) which is approximately 50 feet in length and discharges at a depth of approximately 4.6 feet. The point of discharge is located approximately at latitude 29 ° 38' 48" N, longitude 81 ° 36' 51" W.

Land Application:

None constructed yet.

Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility):

WASTEWATER TREATMENT:

An advanced domestic wastewater treatment facility which uses the activated-sludge process to treat domestic wastewater. The facility has a design flow of 0.036 million gallons per day (MGD). The wastewater treatment facility includes an anoxic/aeration tank, anoxic zone, five aeration tanks, two clarifiers, three sand filters, three chlorine contact chambers and an aerobic digester. Liquid chlorine is used for disinfection. Sodium bisulfate is used for dechlorination. Treated effluent discharges to the Class III fresh waters of the St. Johns River at discharge location D-001, which is approximately 15.24meters (50 feet) in length at an approximate depth of 1.4 meters (4.6 feet). The point of discharges located approximately at latitude 29°38'29" N, and longitude 81°36'58" W.

Appendix F. (cont.)

Hiawatha Condominuims WTTF– FL0043389 – March-2011

1. **PART 1 – Continued: List current Effluent Limits of Outfall(s) to be Sampled: This should include any AO or CO limits the facility may be under.** During the period beginning on the issuance date and lasting through the expiration date of this permit, the permittee is authorized to discharge effluent from Outfall D-001 to St. Johns River. Such discharge shall be limited and monitored by the permittee as specified below and reported in accordance with condition I.C.8:

			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 to St. Johns River from Outfall D-001	MGD	Maximum	0.036	Report	-	-	5 Days/Week	Calculation	CAL-1	
BOD, Carbonaceous 5 day, 20C	MG/L	Maximum	5.0	6.25		10.0	Monthly	Grab	EFD-1	
Solids, Total Suspended	MG/L	Maximum	5.0	6.25		10.0	Monthly	Grab	EFD-1	
pH	SU	Range	-	-	-	6.0 to 8.5	5 Days/Week	Grab	EFD-1	
Coliform, Fecal	#/100ML	Maximum	See Permit Condition I.A.3.				Monthly	Grab	EFD-1	
Total Residual Chlorine (For Disinfection)	MG/L	Minimum	-	-	-	0.5	5 Days/Week	Grab	EFA-1	See Cond.I.A.5
Total Residual Chlorine (For Dechlorination)	MG/L	Maximum	-	-	-	0.01	Monthly	Grab	EFD-1	
Nitrogen, Total (as N)	MG/L	Maximum	3.0	3.75		6.0	Monthly	Grab	EFD-1	
Phosphorus, Total (as P)	MG/L	Maximum	1.0	1.25		2.0	Monthly	Grab	EFD-1	
Nitrogen, Ammonia, Total unionized (as N)	MG/L	Maximum	-	-	-	0.02	Monthly	Grab	EFD-1	
Oxygen, Dissolved (DO)	MG/L	Minimum	-	-	-	5.0	5 Days/Week	Grab	EFD-1	
Whole Effluent Toxicity	See Permit Condition I.A.6								-	

Appendix F. (cont.)

Hiawatha Condominuims WTTF– FL0043389 – March-2011

SPECIAL CONDITIONS REFERENCED ABOVE:

I.A.3 Flow meter shall be utilized to measure flow and calibrated at least annually. ***[62-601.200(17) and .500(6)]***

I.A.5 A minimum of 0.5 mg/L total residual chlorine must be maintained for a minimum contact time of 15 minutes based on peak hourly flow. ***[62-600.440(4)(b)]***

I.A.6 Based upon Best Professional Judgment toxicity testing is not required for this discharge. The Department reserves the right to require whole effluent toxicity testing. ***[62-4, 62-302]***

I.C.6 The sample collection, analytical test methods and method detection limits (MDLs) applicable to this permit shall be in accordance with Rule 62-4.246, Chapters 62-160 and 62-601, F.A.C., and 40 CFR 136, as appropriate. The list of Department established analytical methods, and corresponding MDLs (method detection limits) and PQLs (practical quantitation limits), which is titled "Florida Department of Environmental Protection Table as Required By Rule 62-4.246(4) Testing Methods for Discharges to Surface Water" is available at http://www.dep.state.fl.us/labs/guidance/index.htm. The MDLs and PQLs as described in this list shall constitute the minimum acceptable MDL/PQL values and the Department shall not accept results for which the laboratory's MDLs or PQLs are greater than those described above unless alternate MDLs and/or PQLs have been specifically approved by the Department for this permit. Any method included in the list may be used for reporting as long as it meets the following requirements:

a) **The laboratory's reported MDL and PQL values for the particular method must be equal or less than the corresponding method values specified in the Department's approved MDL and PQL list;**
b) **The laboratory reported MDL for the specific parameter is less than or equal to the permit limit or the applicable water quality criteria, if any, stated in Chapter 62-302, F.A.C. Parameters that are listed as "report only" in the permit shall use methods that provide a MDL, which is equal to or less than the applicable water quality criteria stated in 62-302, F.A.C.; and**
c) **If the MDLs for all methods available in the approved list are above the stated permit limit or applicable water quality criteria for that parameter, then the method with the lowest stated MDL shall be used.**

Where necessary, the permittee may request approval of alternate methods or for alternative MDLs or PQLs for any approved analytical method. Approval of alternate laboratory MDLs or PQLs are not necessary if the laboratory reported MDLs and PQLs are less than or equal to the permit limit or the applicable water quality criteria, if any, stated in Chapter 62-302, F.A.C. Approval of an analytical method not included in the above-referenced list is not necessary if the analytical method is in accordance with 40 CFR 136. ***[62-4.246, 62-160]***

Appendix F. (cont.)

Hiawatha Condominuims WTTF– FL0043389 – March-2011

PART I: Continued

Receiving Waters:	**Classification (indicate whether fresh or marine):**
the Lower St. Johns River (LSJR)	Class III fresh waters

Toxicity Test Requirements (routine and/or additional test language, test species, salinity adjustment, etc.):
Based upon Best Professional Judgment toxicity testing is not required for this discharge.

Administrative or Consent Orders (date executed, specific requirements, interim limit dates-if applicable, etc.):

This permit is not accompanied by an AO or CO

Facility Mixing Zone Details (if applicable):

List Permit Violations (DMR data) and plant upsets that occurred at the plant within the last year: @D-001
For November 1, 2009 to November 30, 2010

Monitoring Date	Parameter Description	Data	Limit	Statistical Base	Units
3/31/2010	SOLIDS, TOTAL SUSPENDED	6.29	6.25	MO AVG	MG/L
3/31/2010	SOLIDS, TOTAL SUSPENDED	6.29	10	MAXIMUM	MG/L
3/31/2010	NITROGEN, TOTAL	10	3.75	MO AVG	MG/L
3/31/2010	NITROGEN, TOTAL	10	6	MAXIMUM	MG/L
4/30/2010	NITROGEN, TOTAL	12.5	3.75	MO AVG	MG/L
4/30/2010	NITROGEN, TOTAL	12.5	6	MAXIMUM	MG/L
4/30/2010	PHOSPHORUS, TOTAL (AS P)	1.54	1.25	MO AVG	MG/L
4/30/2010	PHOSPHORUS, TOTAL (AS P)	1.54	2	MAXIMUM	MG/L
6/30/2010	SOLIDS, TOTAL SUSPENDED	6.75	6.25	MO AVG	MG/L
6/30/2010	SOLIDS, TOTAL SUSPENDED	6.75	10	MAXIMUM	MG/L
6/30/2010	NITROGEN, TOTAL	8.56	3.75	MO AVG	MG/L
6/30/2010	NITROGEN, TOTAL	8.56	6	MAXIMUM	MG/L
6/30/2010	NITROGEN, TOTAL	3.39	3	ANNL AVG	MG/L
7/31/2010	NITROGEN, TOTAL	4.47	3.75	MO AVG	MG/L
8/31/2010	NITROGEN, TOTAL	3.9	3	ANNL AVG	MG/L
9/30/2010	NITROGEN, TOTAL	4.01	3	ANNL AVG	MG/L
10/31/2010	NITROGEN, TOTAL	4.08	3	ANNL AVG	MG/L
11/30/2010	NITROGEN, TOTAL	4.07	3	ANNL AVG	MG/L

Appendix F. (cont.)

Hiawatha Condominuims WTTF– FL0043389 – March-2011

Describe previous FYI and WQBEL study:

Water Quality Base Effluent Limitations (WQBEL): Facility is a part of LSJR TMDL for nutrients.

Effluent limitations are based on a Level I WQBEL developed by District staff and based on a review of the water quality data for the receiving river (St. Johns); revisions to the effluent limitations from the previous permit are not necessary. In accordance with a Putnam County Resolution, this facility is required to meet AWT limitations for the discharge to the St. Johns River ($CBOD_5$ = 5 mg/L, TSS = 5 mg/L, TN = 3 mg/L and TP = 1mg/L).

Previous Third Year Inpsection : February 2006

The effluent sample collected from the EFD-1 sampling site for Outfall D-001 for this facility on December 5, 2005, was not acutely toxic to either test species during the acute screen 48-hour Bioassays. The effluent AGP result was less than the "problem" threshold for fresh receiving Waters. The effluent specific conductance exceeded the freshwater quality criterion.

Describe previous or current Enforcement Actions (including WLs):
Warning Letter No. WL-10-045-DW was issued on 6/2/2010 for effluent exceedances.
Warning Letter No. WL03-0051-DW-54-NED issued 12/12/2003 for not responding to non-compliance letters and not meeting compliance schedule

Describe any violations or problems noted in previous inspection:
2.1 Observation: A Certificate of Completion of Construction was not submitted to the Department prior to placing the facility into service. Form 13 (Availability of Record Drawings) also needs to be submitted to the Department.
2.2 Observation: The facility failed to meet the schedule in the permit/order. The rapid rate land application system has not been constructed.
5.4 Observation: General – The operations and maintenance manual was not available during the inspection.
5.5 Observation: General – During the inspection it was observed that calibrations of the chlorine meter were not being thoroughly documented. Zero readings were not included in the calibration log.
5.6 Observation: General – During the inspection discharge monitoring reports, lab sheets, and chain of custody sheets were not available.
5.7 Observation: General – An application for a permit modification is needed to include the following:

- To take out the equalization basin in the facility description in the permit.
- To change the flow monitoring location from effluent to influent.
- To take out the discharge location of R-001 as a possible disposal site.
- Take out the groundwater requirements in the permit.

6.9 Observation: *Aeration Basins/Act. Sludge* – Some of the aeration basins were not providing adequate mixing. Several dead spots were observed in the basins.
6.17 Observation: *Clarifiers* - The clarifier weirs are not level.
6.20 Observation: *Filtration* – The backwash well had a buildup of sand in it. Because of this it has been determined that additional media needs to be added to the filtration system.
6.21 Observation: *Disinfection* - The chlorine contact chamber was not providing a minimum contact time of 15 minutes.
6.25 Observation: Anoxic Basins - During the inspection it was observed that the anoxic basins were receiving air when the blowers were running.
10.5 Observation: General – The permit states that 78% of the effluent should be going to surface water and 22% should be going to the rapid rate absorption field. During the inspection it was noted that the absorption field will not be constructed. Thus the flow percentages are not being met in the permit.
11.1 Observation: Sludge hauling manifests were not available for review during the inspection.

Appendix F. (cont.)

Hiawatha Condominuims WTTF– FL0043389 – March-2011

Discuss whether DMR trends within previous five years are improving or declining: Within the past year nitrogen issues have become more prevalent. Monthly flow has been around 0.023MGD for years.
Additional Comments (this should include a trend of the Effluent, i.e. if the facility is now Reuse): Facility had permitted to encompass a contruction at the plant including 3 absorption fields that would increase the permitted capacity. Construction has not begun and currently there are no plans to begin construction.

Appendix F. (cont.)

Hiawatha Condominuims WTTF– FL0043389 – March-2011

PART II: Sampling Event Information	
Date(s) sample collected: 4/11/2011 (planned)	Sampler(s): Eesa Ali, Sharon Piltz
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): (D-001 only)	
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: (Note – discharges through diffuser in ICW). Describe appearance of final effluent on day of sampling ---_____	

Appendix G. EPA End Sheet

The Bioassay of the Hiawatha Condominiums WWTF Plant effluent sampled on August 15, 2011. NPDES# FL0043389.

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 4 3 3 8 9 11	12 1 1 0 8 1 5	18 B	19 S	20 1

Remarks

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The Priority Pollutants Analysis of the Hiawatha Condominiums WWTF Plant effluent sampled on August 15, 2011. NPDES# FL0043389.

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 4 3 3 8 9 11	12 1 1 0 8 1 5	18 X	19 S	20 1

Remarks

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Biological Analyses of the Hiawatha Condominiums WWTF Plant effluent sampled on August 15, 2011. NPDES# FL0043389.

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 4 3 3 8 9 11	12 1 1 0 8 1 5	18 S	19 S	20 1

Remarks

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