

Effluent Quality Assessment

Innlet Beach WWTF

St. Johns County

NPDES #FL0044237

Sampled April 14, 2008

August 2008

Biology Section
Bureau of Laboratories
Division of Environmental Assessment and Restoration

Quality Manual No. 870346G
NELAC Certification No. E31780

Innlet Beach Wastewater Treatment Facility, Palmera Drive East, Ponte Vedra Beach, St. Johns County, Florida, 32082, NPDES #FL0044237. Effluent samples for this facility were collected on April 14, 2008.

Introduction

Innlet Beach Wastewater Treatment Facility (WWTF) is an existing 0.50 million gallons per day (MGD) annual average daily flow (AADF) permitted capacity conventional activated-sludge domestic wastewater treatment facility with high level disinfection. Treated effluent is disposed via two methods. The primary method is by land application through Reuse System R-001. R-001 is an existing 0.50 MGD AADF permitted capacity slow-rate public-access irrigation system located at Oakbridge Golf Course and Stadium Golf Course. The secondary (alternative) method of disposal is discharge of effluent to the Class III Marine surface waters of the Intracoastal Waterway through the Sawgrass Players Club stormwater system, at the limited-wet-weather (LLW) outfall, Outfall D-001. The outfall is approximately 3 m (10 feet) in length and discharges at a depth of approximately 1.5 m (5 feet). The point of discharge is located approximately at latitude 30° 10' 16" N, longitude 81° 24' 15" W. Discharge through Outfall D-001 is intermittent and rainfall dependent and is authorized only when the dilution ratio (stream flow divided by LWW discharge flow) equals or exceeds the minimum stream dilution factor (SDF) of 75. The AADF from April 2007 through March 2008 was 0.151 MGD. The wastewater treatment system consists of:

- one static bar-screening unit with trash trough;
- one aeration tank with blower system;
- one secondary clarifier;
- one disc cloth-membrane filtration unit;
- one chlorine contact chamber;
- one aerobic digester;
- one 3.4 million gallon capacity unlined storage pond for reclaimed water;
- one 0.4 million gallon capacity rejected-effluent storage pond;
- electronic surveillance equipment and backup power.

Chlorine gas is used for chlorination. The effluent is not dechlorinated. Domestic residuals are treated to meet Class B stabilization requirements and land applied.

The facility has no current Administrative Orders or Consent Orders. The facility has no mixing zones. A review of Discharge Monitoring Report (DMR) data for the past year did not reveal any violations of permit conditions. The effluent monitoring report and results of the Third Year Inspection performed on May 19, 2003, indicated that the effluent was in compliance with its permit at that time (Facility information provided by Edward Jamro of FDEP Northeast District.)

Methods

Samples were collected from the EFA-1 (immediately after disinfection prior to discharge to the holding pond), EFB-1 (after filtration and prior to disinfection) and EFD-1 (at the reclaimed water holding pond just prior to the discharge point for land application or the Sawgrass stormwater system) NPDES sampling points for Outfall D-001 by Jim Wright, Jennifer Legree and Ed Jamro (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/qa/sops.htm.

See Appendix A for the completed chain of custody form.

The 48-hour* screening toxicity tests and algal growth potential test were performed following internal DEP SOPs TA07_01, TA07_02, and TA08_01 through TA08_09. All internal DEP SOPs are available on the web at: http://www.floridadep.org/labs/cgi-bin/sop/biosop.asp. Although the

48-hour acute screening toxicity test does not reflect the required permit test conditions, passing test results provide confidence that the required permit conditions would likely be met.

Total residual chlorine was detected in the bioassay sample in the laboratory. An aliquot of this sample was dechlorinated by the addition of sodium thiosulfate (0.025 N) at a rate of 2.6 mL per liter of sample to neutralize the chlorine. Bioassays were performed on the dechlorinated aliquot in addition to the bioassays performed on the original sample. The same concentration of sodium thiosulfate was added to the dechlorinated test controls. The purpose of the dechlorinated test controls was to confirm that there was no adverse effect of adding sodium thiosulfate to the sample. There was no mortality in the dechlorinated controls of either test species.

An aliquot of the AGP sample was salinity adjusted to meet the minimum salinity requirements of the marine test species. Both a freshwater and a marine AGP test were performed.

Toxicity Test Results

Tests were performed April 15 - 17, 2006.

Ceriodaphnia dubia 48-hour acute screening bioassay –	LC_{50} < 100%, 100% mortality* in 100% sample within 35 minutes of test initiation
Ceriodaphnia dubia 48-hour acute screening bioassay – **Dechlorinated** sample	LC_{50} > 100%, 5% mortality* in 100% sample at 48 hours
Cyprinella leedsi 48-hour acute screening bioassay –	LC_{50} < 100%, 100% mortality* in 100% sample within 15 minutes of test initiation
Cyprinella leedsi 48-hour acute screening bioassay – **Dechlorinated** sample	LC_{50} > 100%, 0% mortality* in 100% sample at 48 hours

The bioassay samples (100% effluent) were acutely toxic to the test organisms. These results constitute a violation of one of the permit conditions for toxicity (mortality of > 50% in any routine sample). The dechlorinated bioassay samples were not acutely toxic to the test organisms.

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.

*NOTE: In a 48-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.).

Algal Growth Potential

The effluent Algal Growth Potential (AGP) was 304 mg dry wt/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. Raschke and Shultz (1987) found that AGP values above 5.0 mg dry weight/L represent a "problem" threshold for fresh receiving waters, implying nutrient enrichment. The analytical chemistry suggests that the effluent is nitrogen-limited. The predicted AGP based on inorganic nitrogen concentrations was 230.1 (±20%) mg dry wt/L (Table 1a; Miller et al. 1978).

The salinity-adjusted effluent AGP was 3 U* mg dry wt/L of the saltwater species, *Dunaliella tertiolecta* (Table 1b). Raschke and Shultz found that AGP values above 10.0 mg dry weight/L represent a “problem” threshold for marine receiving waters, implying nutrient enrichment (personal communication with Ron Raschke USEPA Region 4, 1987). One potential reason for such low growth in the salinity-adjusted sample is precipitation of enough orthophosphate by the added salts that the sample became extremely phosphorus-limited (Manahan 1994).

*U – Material was analyzed for but not detected; the value reported is the minimum detection limit.

See Table 1 for AGP results.

Chemistry Results

Total residual chlorine (TRC) was detected in the effluent (5.04 mg/L) in the field and in the bioassay sample (2.38 mg/L) in the bioassay laboratory. The effluent TRC concentration did not exceed the facility’s permitted limit (≥ 1.0 mg/L) for the EFA-1 and EFD-1 NPDES sample collection points. Total ammonia was not detected in the bioassay sample in the bioassay laboratory. The total ammonia concentration in the sample collected and preserved for chemical analysis was 0.054 mg/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was ≤ 0.02 mg/L.

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

See Table 2 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 April 14, 2008, was acutely toxic to both test species during the acute screening bioassays. The dechlorinated aliquot of the effluent sample was not toxic to the test organisms within 48-hours. The effluent AGP result exceeded the "problem” threshold for fresh receiving waters, suggesting nutrient enrichment may be an issue. The salinity-adjusted AGP result, which was less than the method detection limit, was likely the result of the salinity-adjusting process removing essential nutrients from the sample. Effluent water quality samples did not exceed any applicable water quality standards or violate any permit conditions other than toxicity.

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.

Manahan, S. E. 1994. Environmental Chemistry, 6th edition. Lewis Publishers, USA. 811 pp

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

Table 1a. Measured and predicted algal growth potential (AGP; mg dry weight/L) for total soluble inorganic nitrogen (TSIN), orthophosphate (OP), total nitrogen (TN) and total phosphorus (TP) limitation of the freshwater species *Pseudokirchneriella subcapitata* and ratios of nitrogen to phosphorus for samples collected from the Innlet Beach WWTF on April 14, 2008.

Innlet Beach WWTF							
Location	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
Effluent	304.0	230.1 ± 46.0	1204.0 ± 240.8	288.8 ± 57.8	1419.0 ± 283.8	2.2	2.3

Table 1b. Measured algal growth potential (AGP; mg dry weight/L) of the saltwater species *Dunaliella tertiolecta* and ratios of nitrogen to phosphorus for samples collected from the Innlet Beach WWTF on April 14, 2008.

Innlet Beach WWTF			
Location	AGP (measured)	Inorganic N:P ratio	Total N:P ratio
Effluent*	3.0 U	2.2	2.3

* Salinity adjusted aliquot of effluent.

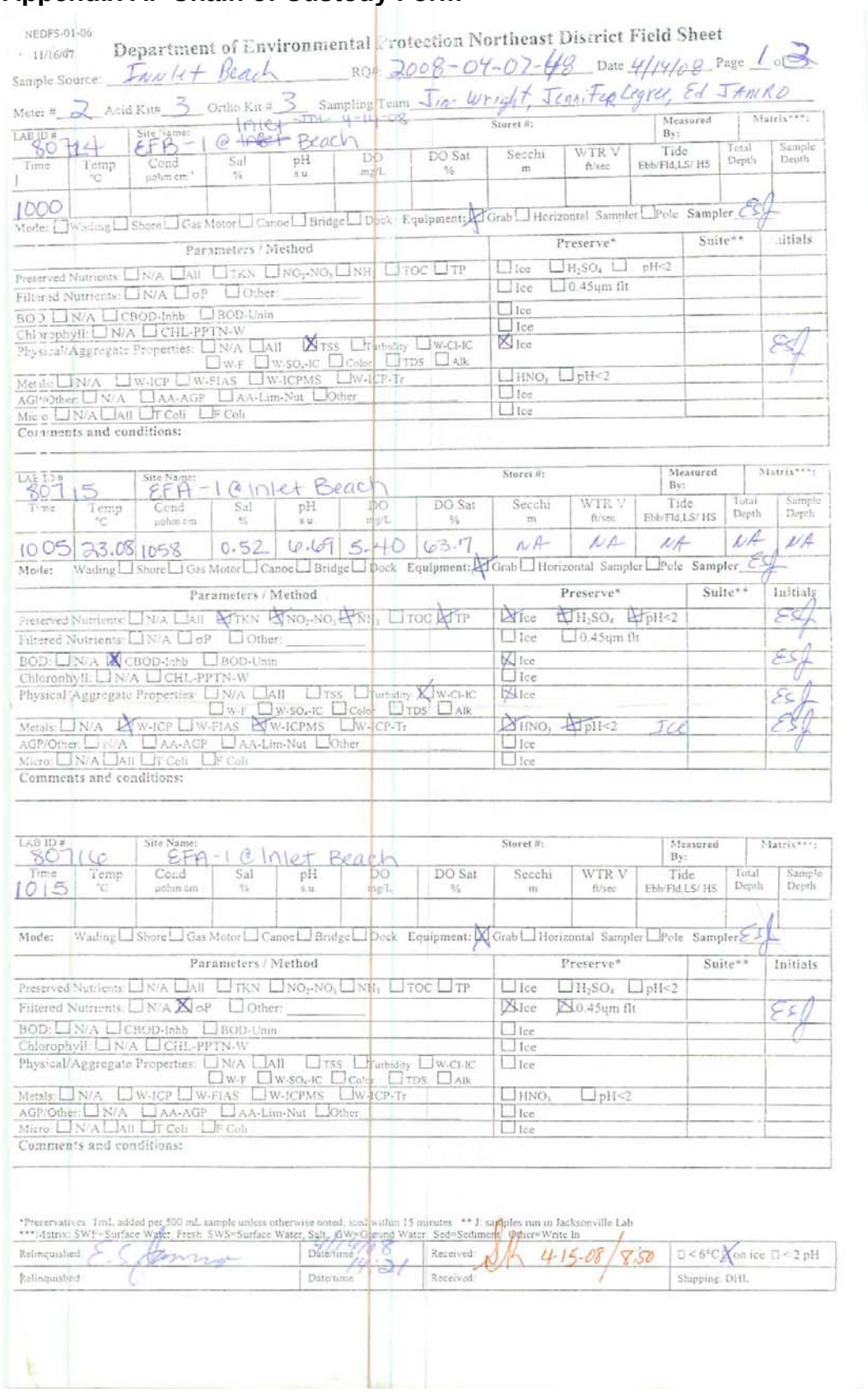
Table 2. Effluent limits, Class III Criteria for predominantly marine waters and chemical and microbiological data for samples collected from the Innlet Beach WWTF on April 14, 2008.

Innlet Beach WWTF NPDES# FL0044237	Class III Criteria	Effluent Limits	Effluent	
Organic Constituents (µg/L)				
Atrazine	-	-	0.36	
Metals (µg/L unless otherwise noted)				
Aluminum	≤ 1500	-	60	U
Arsenic	≤ 50	-	0.5	U
Cadmium	≤ 8.8	-	0.02	U
Calcium (mg/L)	-	-	76.2	
Chromium-III	-	-	1	U
Copper	≤ 3.7	-	1.8	I
Iron	≤ 300	-	55	I
Lead	≤ 8.5	-	0.2	U
Magnesium (mg/L)	-	-	30.8	
Nickel	≤ 8.3	-	0.9	I
Selenium	≤ 71	-	0.5	U
Silver	≤ 2.3	-	0.025	U
Zinc	≤ 86	-	61	
Nutrients (mg/L)				
Ortho-phosphate	-	Report	2.8	
Total Phosphorus	-	Report	3.3	
Total Ammonia	-	Report	0.054	
Un-ionized Ammonia	-	-	≤ 0.02	c
Nitrate and Nitrite	-	-	6	
Total Kjeldahl Nitrogen	-	≤ 10 s	1.6	
Organic Nitrogen	-	Report	1.546	c
Total Nitrogen	-	Report	7.6	c
General Physical and Chemical Parameters				
Dissolved Oxygen (mg/L)	≥ 4.0 s	-	5.4	
pH (SU)	6.5 - 8.5 s	6.5 - 8.5 s	6.7	
Conductivity (µmhos/cm)	-	-	1058	
Temperature °C	-	-	23.1	
Total Residual Chlorine (mg/L)	≤ 0.01	≥ 1 s	5.04	
Chlorophyll a (µg/L) - Corrected	-	-	0.55	U
Phaeophytin (µg/L)	-	-	0.24	U
Total Suspended Solids (mg/L)	-	≤ 5 s	4	U
CBOD, 5 day (mg/L), N - inhibited	-	≤ 60 s	4.6	
Flow (MGD)	-	≤ 0.5 a	0.151	a
Hardness (mg $CaCO_3$)	-	-	317.11	c
Microbiology (Number of colony forming units/100ml)				
Fecal Coliforms	≤ 400s #	≤ 25 s	1	U€

Value exceeds the Class III Water Quality Criteria or permit limits

a - Annual average
c - Value is calculated
s - Single sample
F - Analyte was detected in both sample and field blank
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J - 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.)
€ - Analysis performed by private laboratory.

Appendix A. Chain of Custody Form



NEDFS-01-06
11/16/07

Department of Environmental Protection Northeast District Field Sheet

Sample Source: Inlet Beach RQ#: 2008-04-07-48 Date: 4/14/08 Page: 1 of 3

Meter #: 2 Acid Kit: 3 Ortho Kit #: 3 Sampling Team: Jim Wright, Jennifer Legree, Ed JAMRO

LAB ID #: 80714 Site Name: EFB-1 @ ~~Inlet~~ Beach Stored #: Measured By: Matrix***:

Time	Temp °C	Cond µohm cm⁻¹	Sal %	pH s.u.	DO mg/L	DO Sat %	Secchi m	WTR V ft/sec	Tide Ebb/Fld,LS/HS	Total Depth	Sample Depth
1000											

Mode: ☐ Wading ☐ Shore ☐ Gas Motor ☐ Canoe ☐ Bridge ☐ Dock Equipment: ☒ Grab ☐ Horizontal Sampler ☐ Pole Sampler: ESJ

Parameters / Method	Preserve*	Suite**	Initials
Preserved Nutrients: ☐ N/A ☐ All ☐ TKN ☐ NO_2-NO_3 ☐ NH_3 ☐ TOC ☐ TP	☐ Ice ☐ H_2SO_4 ☐ pH<2		
Filtered Nutrients: ☐ N/A ☐ oP ☐ Other:	☐ Ice ☐ 0.45µm flt		
BOD: ☐ N/A ☐ CBOD-Inhb ☐ BOD-Unin	☐ Ice		
Chlorophyll: ☐ N/A ☐ CHL-PPTN-W	☐ Ice		
Physical/Aggregate Properties: ☐ N/A ☐ All ☒ TSS ☐ Turbidity ☐ W-Cl-IC ☐ W-F ☐ W-SO_4-IC ☐ Color ☐ TDS ☐ Alk	☒ Ice		ESJ
Metals: ☐ N/A ☐ W-ICP ☐ W-FIAS ☐ W-ICPMS ☐ W-ICP-Tr	☐ HNO_3 ☐ pH<2		
AGP/Other: ☐ N/A ☐ AA-AGP ☐ AA-Lim-Nut ☐ Other	☐ Ice		
Micro: ☐ N/A ☐ All ☐ T Coli ☐ F Coli	☐ Ice		

Comments and conditions:

LAB ID #: 80715 Site Name: EFA-1 @ Inlet Beach Stored #: Measured By: Matrix***:

Time	Temp °C	Cond µohm cm	Sal %	pH s.u.	DO mg/L	DO Sat %	Secchi m	WTR V ft/sec	Tide Ebb/Fld,LS/HS	Total Depth	Sample Depth
1005	23.08	1058	0.52	6.69	5.40	63.7	NA	NA	NA	NA	NA

Mode: Wading ☐ Shore ☐ Gas Motor ☐ Canoe ☐ Bridge ☐ Dock Equipment: ☒ Grab ☐ Horizontal Sampler ☐ Pole Sampler: ESJ

Parameters / Method	Preserve*	Suite**	Initials
Preserved Nutrients: ☐ N/A ☐ All ☒ TKN ☒ NO_2-NO_3 ☒ NH_3 ☐ TOC ☒ TP	☒ Ice ☐ H_2SO_4 ☒ pH<2		ESJ
Filtered Nutrients: ☐ N/A ☐ oP ☐ Other:	☐ Ice ☐ 0.45µm flt		
BOD: ☐ N/A ☒ CBOD-Inhb ☐ BOD-Unin	☒ Ice		ESJ
Chlorophyll: ☐ N/A ☐ CHL-PPTN-W	☐ Ice		
Physical/Aggregate Properties: ☐ N/A ☐ All ☐ TSS ☐ Turbidity ☒ W-Cl-IC ☐ W-F ☐ W-SO_4-IC ☐ Color ☐ TDS ☐ Alk	☒ Ice		ESJ
Metals: ☐ N/A ☒ W-ICP ☐ W-FIAS ☒ W-ICPMS ☐ W-ICP-Tr	☒ HNO_3 ☒ pH<2 ICE		ESJ
AGP/Other: ☐ N/A ☐ AA-AGP ☐ AA-Lim-Nut ☐ Other	☐ Ice		
Micro: ☐ N/A ☐ All ☐ T Coli ☐ F Coli	☐ Ice		

Comments and conditions:

LAB ID #: 80716 Site Name: EFA-1 @ Inlet Beach Stored #: Measured By: Matrix***:

Time	Temp °C	Cond µohm cm	Sal %	pH s.u.	DO mg/L	DO Sat %	Secchi m	WTR V ft/sec	Tide Ebb/Fld,LS/HS	Total Depth	Sample Depth
1015											

Mode: Wading ☐ Shore ☐ Gas Motor ☐ Canoe ☐ Bridge ☐ Dock Equipment: ☒ Grab ☐ Horizontal Sampler ☐ Pole Sampler: ESJ

Parameters / Method	Preserve*	Suite**	Initials
Preserved Nutrients: ☐ N/A ☐ All ☐ TKN ☐ NO_2-NO_3 ☐ NH_3 ☐ TOC ☐ TP	☐ Ice ☐ H_2SO_4 ☐ pH<2		
Filtered Nutrients: ☐ N/A ☒ oP ☐ Other:	☒ Ice ☒ 0.45µm flt		ESJ
BOD: ☐ N/A ☐ CBOD-Inhb ☐ BOD-Unin	☐ Ice		
Chlorophyll: ☐ N/A ☐ CHL-PPTN-W	☐ Ice		
Physical/Aggregate Properties: ☐ N/A ☐ All ☐ TSS ☐ Turbidity ☐ W-Cl-IC ☐ W-F ☐ W-SO_4-IC ☐ Color ☐ TDS ☐ Alk	☐ Ice		
Metals: ☐ N/A ☐ W-ICP ☐ W-FIAS ☐ W-ICPMS ☐ W-ICP-Tr	☐ HNO_3 ☐ pH<2		
AGP/Other: ☐ N/A ☐ AA-AGP ☐ AA-Lim-Nut ☐ Other	☐ Ice		
Micro: ☐ N/A ☐ All ☐ T Coli ☐ F Coli	☐ Ice		

Comments and conditions:

*Preservatives: 1mL added per 500 mL sample unless otherwise noted; iced within 15 minutes. ** J: samples run in Jacksonville Lab
***Matrix: SWF=Surface Water, Fresh; SWS=Surface Water, Salt; GW=Ground Water; Sed=Sediment; Other=Write In

Relinquished: E. Stamm	Date/time: 4/14/08 14:21	Received: SK 4-15-08 / 8:50	☐ < 6°C ☒ on ice ☐ < 2 pH
Relinquished	Date/time	Received	Shipping: DHL

Appendix A. (continued)

NEDFS-01-06
11/16/07

Department of Environmental Protection Northeast District Field Sheet

Sample Source: Inlet Beach RQ#: 2008-04-07-45 Date: 4/14/08 Page 2 of 3

Meter #: 2 Acid Kit#: 3 Ortho Kit #: 3 Sampling Team: JW / JL / EJ

LAB ID #	Site Name: EFA-1@Inlet Beach	Storet #:	Measured By:	Matrix***:
80717				

Time	Temp °C	Cond µohm cm*	Sal %	pH s.u.	DO mg/L	DO Sat %	Secchi m	WTR V ft/sec	Tide Ebb/Fld,LS/HS	Total Depth	Sample Depth
1102											

Mode: ☐ Wading ☐ Shore ☐ Gas Motor ☐ Canoe ☐ Bridge ☐ Dock Equipment: ☒ Grab ☐ Horizontal Sampler ☐ Pole Sampler: ESJ

Parameters / Method	Preserve*	Suite**	Initials
Preserved Nutrients: ☐ N/A ☐ All ☐ TKN ☐ NO_2-NO_3 ☐ NH_3 ☐ TOC ☐ TP	☐ Ice ☐ H_2SO_4 ☐ pH<2		
Filtered Nutrients: ☐ N/A ☐ oP ☐ Other:	☐ Ice ☐ 0.45µm flt		
BOD: ☐ N/A ☐ CBOD-Inhb ☐ BOD-Unin	☐ Ice		
Chlorophyll: ☐ N/A ☐ CHL-PPTN-W	☐ Ice		
Physical/Aggregate Properties: ☐ N/A ☐ All ☐ TSS ☐ Turbidity ☐ W-Cl-IC ☐ W-F ☐ W-SO_4-IC ☐ Color ☐ TDS ☐ Alk	☐ Ice		
Metals: ☐ N/A ☐ W-ICP ☐ W-FIAS ☐ W-ICPMS ☐ W-ICP-Tr	☐ HNO_3 ☐ pH<2		
AGP/Other: ☐ N/A ☐ AA-AGP ☐ AA-Lim-Nut ☐ Other	☐ Ice		
Micro: ☐ N/A ☐ All ☐ T Coli ☐ F Coli: X W-EWA	☒ Ice		ESJ

Comments and conditions:

LAB ID #	Site Name: EFA-1@Inlet Beach	Storet #:	Measured By:	Matrix***:
80718				

Time	Temp °C	Cond µohm cm	Sal %	pH s.u.	DO mg/L	DO Sat %	Secchi m	WTR V ft/sec	Tide Ebb/Fld,LS/HS	Total Depth	Sample Depth
1027											

Mode: Wading ☐ Shore ☐ Gas Motor ☐ Canoe ☐ Bridge ☐ Dock Equipment: ☒ Grab ☐ Horizontal Sampler ☐ Pole Sampler: ESJ

Parameters / Method	Preserve*	Suite**	Initials
Preserved Nutrients: ☐ N/A ☐ All ☐ TKN ☐ NO_2-NO_3 ☐ NH_3 ☐ TOC ☐ TP	☐ Ice ☐ H_2SO_4 ☐ pH<2		
Filtered Nutrients: ☐ N/A ☐ oP ☐ Other:	☐ Ice ☐ 0.45µm flt		
BOD: ☐ N/A ☐ CBOD-Inhb ☐ BOD-Unin	☐ Ice		
Chlorophyll: ☐ N/A ☐ CHL-PPTN-W	☐ Ice		
Physical/Aggregate Properties: ☐ N/A ☐ All ☐ TSS ☐ Turbidity ☐ W-Cl-IC ESJ ☐ W-F ☐ W-SO_4-IC ☐ Color ☐ TDS ☐ Alk	☒ ESJ		
Metals: ☐ N/A ☐ W-ICP ☒ W-FIAS ☐ W-ICPMS ☐ W-ICP-Tr	☐ HNO_3 ☐ pH<2		
AGP/Other: ☐ N/A ☐ AA-AGP ☐ AA-Lim-Nut ☐ Other	☐ Ice		
Micro: ☐ N/A ☐ All ☐ T Coli ☒ F Coli	☒ Ice		ESJ

Comments and conditions: F. Coli - Delivered to A.E.L. @ 1305 on 4/14/08

LAB ID #	Site Name: EFA-1@Inlet Beach	Storet #:	Measured By:	Matrix***:
80719				

Time	Temp °C	Cond µohm cm	Sal %	pH s.u.	DO mg/L	DO Sat %	Secchi m	WTR V ft/sec	Tide Ebb/Fld,LS/HS	Total Depth	Sample Depth
1025											

Mode: Wading ☐ Shore ☐ Gas Motor ☐ Canoe ☐ Bridge ☐ Dock Equipment: ☒ Grab ☐ Horizontal Sampler ☐ Pole Sampler: ESJ

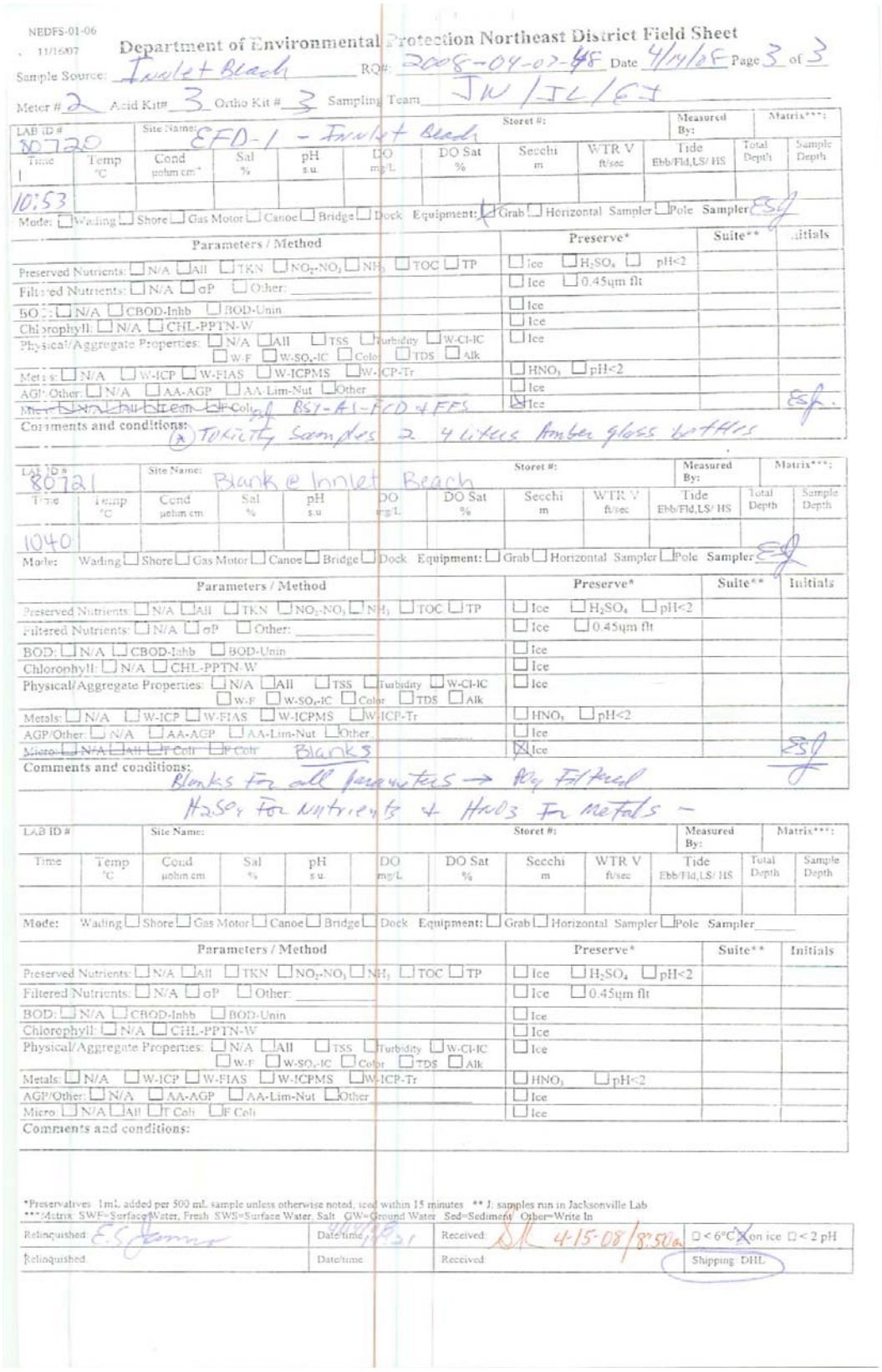
Parameters / Method	Preserve*	Suite**	Initials
Preserved Nutrients: ☐ N/A ☐ All ☐ TKN ☐ NO_2-NO_3 ☐ NH_3 ☐ TOC ☐ TP	☐ Ice ☐ H_2SO_4 ☐ pH<2		
Filtered Nutrients: ☐ N/A ☐ oP ☐ Other:	☐ Ice ☐ 0.45µm flt		
BOD: ☐ N/A ☐ CBOD-Inhb ☐ BOD-Unin	☐ Ice		
Chlorophyll: ☐ N/A ☐ CHL-PPTN-W	☐ Ice		
Physical/Aggregate Properties: ☐ N/A ☐ All ☐ TSS ☐ Turbidity ☐ W-Cl-IC ☐ W-F ☐ W-SO_4-IC ☐ Color ☐ TDS ☐ Alk	☐ Ice		
Metals: ☐ N/A ☐ W-ICP ☐ W-FIAS ☐ W-ICPMS ☐ W-ICP-Tr	☐ HNO_3 ☐ pH<2		
AGP/Other: ☐ N/A ☒ AA-AGP ☐ AA-Lim-Nut ☐ Other	☒ Ice		ESJ
Micro: ☐ N/A ☐ All ☐ T Coli ☐ F Coli	☐ Ice		

Comments and conditions:

*Preservatives: 1mL added per 500 mL sample unless otherwise noted, iced within 15 minutes ** If samples run in Jacksonville Lab
***Matrix: SWF=Surface Water, Fresh SWS=Surface Water, Salt GW=Ground Water Sed=Sediment Other=Write In

Relinquished: E. S Jamison	Date/time: 4/14/08 1621	Received: DL 4/15/08 8:50a	☐ < 6°C ☒ on ice ☐ < 2 pH
Relinquished:	Date/time:	Received:	Shipping: DHL

Appendix A. (continued)



NEDFS-01-06
11/16/07

Department of Environmental Protection Northeast District Field Sheet

Sample Source: Inlet + Beach RQ#: 2008-04-07-48 Date 4/14/08 Page 3 of 3

Meter # 2 Acid Kit# 3 Ortho Kit # 3 Sampling Team JW / JL / CT

LAB ID #	Site Name: EFD-1 - Inlet Beach					Storet #:			Measured By:	Matrix***:
Time	Temp °C	Cond µohm cm	Sal %	pH s.u.	DO mg/L	DO Sat %	Secchi m	WTR V ft/sec	Tide Ebb/Fld,LS/ HS	Total Depth	Sample Depth
10:53											

Mode: ☐ Wading ☐ Shore ☐ Gas Motor ☐ Canoe ☐ Bridge ☐ Dock Equipment: ☑ Grab ☐ Horizontal Sampler ☐ Pole Sampler ESJ

Parameters / Method	Preserve*	Suite**	Initials
Preserved Nutrients: ☐ N/A ☐ All ☐ TKN ☐ NO_2-NO_3 ☐ NH_3 ☐ TOC ☐ TP	☐ Ice ☐ H_2SO_4 ☐ pH<2		
Filtered Nutrients: ☐ N/A ☐ oP ☐ Other:	☐ Ice ☐ 0.45µm flt		
BOD: ☐ N/A ☐ CBOD-Inhb ☐ BOD-Unin	☐ Ice		
Chlorophyll: ☐ N/A ☐ CHL-PPTN-W	☐ Ice		
Physical/Aggregate Properties: ☐ N/A ☐ All ☐ TSS ☐ Turbidity ☐ W-Cl-IC ☐ W-F ☐ W-SO_4-IC ☐ Color ☐ TDS ☐ Alk	☐ Ice		
Metals: ☐ N/A ☐ W-ICP ☐ W-FIAS ☐ W-ICPMS ☐ W-ICP-Tr	☐ HNO_3 ☐ pH<2		
AGP/Other: ☐ N/A ☐ AA-AGP ☐ AA-Lim-Nut ☐ Other	☐ Ice		
~~Micro: ☐ N/A ☐ All ☐ T Coli ☐ F Coli~~ BS1-A1-FCD 4 FFS	☒ Ice		ESJ

Comments and conditions: * Toxicity Samples 2 4 Liters Amber glass bottles

LAB ID #	Site Name: Blank @ Inlet Beach					Storet #:			Measured By:	Matrix***:
Time	Temp °C	Cond µohm cm	Sal %	pH s.u.	DO mg/L	DO Sat %	Secchi m	WTR V ft/sec	Tide Ebb/Fld,LS/ HS	Total Depth	Sample Depth
1040											

Mode: Wading ☐ Shore ☐ Gas Motor ☐ Canoe ☐ Bridge ☐ Dock Equipment: ☐ Grab ☐ Horizontal Sampler ☐ Pole Sampler ESJ

Parameters / Method	Preserve*	Suite**	Initials
Preserved Nutrients: ☐ N/A ☐ All ☐ TKN ☐ NO_2-NO_3 ☐ NH_3 ☐ TOC ☐ TP	☐ Ice ☐ H_2SO_4 ☐ pH<2		
Filtered Nutrients: ☐ N/A ☐ oP ☐ Other:	☐ Ice ☐ 0.45µm flt		
BOD: ☐ N/A ☐ CBOD-Inhb ☐ BOD-Unin	☐ Ice		
Chlorophyll: ☐ N/A ☐ CHL-PPTN-W	☐ Ice		
Physical/Aggregate Properties: ☐ N/A ☐ All ☐ TSS ☐ Turbidity ☐ W-Cl-IC ☐ W-F ☐ W-SO_4-IC ☐ Color ☐ TDS ☐ Alk	☐ Ice		
Metals: ☐ N/A ☐ W-ICP ☐ W-FIAS ☐ W-ICPMS ☐ W-ICP-Tr	☐ HNO_3 ☐ pH<2		
AGP/Other: ☐ N/A ☐ AA-AGP ☐ AA-Lim-Nut ☐ Other	☐ Ice		
Micro: ☐ N/A ☐ All ☐ T Coli ☐ F Coli Blanks	☒ Ice		ESJ

Comments and conditions: Blanks for all parameters → Mg Filtered
H_2SO_4 for nutrients + HNO_3 for metals –

LAB ID #	Site Name:					Storet #:			Measured By:	Matrix***:
Time	Temp °C	Cond µohm cm	Sal %	pH s.u.	DO mg/L	DO Sat %	Secchi m	WTR V ft/sec	Tide Ebb/Fld,LS/ HS	Total Depth	Sample Depth

Mode: Wading ☐ Shore ☐ Gas Motor ☐ Canoe ☐ Bridge ☐ Dock Equipment: ☐ Grab ☐ Horizontal Sampler ☐ Pole Sampler

Parameters / Method	Preserve*	Suite**	Initials
Preserved Nutrients: ☐ N/A ☐ All ☐ TKN ☐ NO_2-NO_3 ☐ NH_3 ☐ TOC ☐ TP	☐ Ice ☐ H_2SO_4 ☐ pH<2		
Filtered Nutrients: ☐ N/A ☐ oP ☐ Other:	☐ Ice ☐ 0.45µm flt		
BOD: ☐ N/A ☐ CBOD-Inhb ☐ BOD-Unin	☐ Ice		
Chlorophyll: ☐ N/A ☐ CHL-PPTN-W	☐ Ice		
Physical/Aggregate Properties: ☐ N/A ☐ All ☐ TSS ☐ Turbidity ☐ W-Cl-IC ☐ W-F ☐ W-SO_4-IC ☐ Color ☐ TDS ☐ Alk	☐ Ice		
Metals: ☐ N/A ☐ W-ICP ☐ W-FIAS ☐ W-ICPMS ☐ W-ICP-Tr	☐ HNO_3 ☐ pH<2		
AGP/Other: ☐ N/A ☐ AA-AGP ☐ AA-Lim-Nut ☐ Other	☐ Ice		
Micro: ☐ N/A ☐ All ☐ T Coli ☐ F Coli	☐ Ice		

Comments and conditions:

*Preservatives: 1mL added per 500 mL sample unless otherwise noted; iced within 15 minutes ** J: samples run in Jacksonville Lab
***Matrix: SWF=Surface Water, Fresh SWS=Surface Water, Salt GW=Ground Water Sed=Sediment Other=Write In

Relinquished: E.S. Jones	Date/time: 4/15/08 8:30	Received: DK 4-15-08 8:50a	☐ < 6°C ☒ on ice ☐ < 2 pH
Relinquished:	Date/time:	Received:	Shipping: DHL

FDEP Biology Laboratory - Acute Screen Bioassay Bench Sheets

Facility: Inlet Beach WWTF

Address: Palmera Drive East

City: Ponte Verde Beach **County:** St. Johns

Contact/District: Ed Jarmo / Northeast

NPDES Permit #: FL 0044237

LIMS Job # TLH-2008-4-15-76-01 **LIMS Sample #:** 1095008

Lims Data Entry: 4-21-08 MF Data Entry Verification: 4-21-08 BA

Sample Collection: Date: 4.14.08 Time: 1000

Hold Time Start: Date: 4.14.08 Time: 1000

Comments: Sample TRC 2.38mg/L. Aliquot was dechlorinated by the addition of 2.6 ml of 0.025N Sodium thiosulfate per liter of sample. MF 4-15-08
Dechlorinated control prepared by adding 2.6 ml of 0.025N Sodium thiosulfate per liter of appropriate Control water. MF 4-21-08
TOST 1-LC50 = >100%; mortality = 100%
Dechlorinated LC50 = >100%; mortality = 5%
TOST 2-LC50 = <100%; mortality: 100%
Dechlorinated LC50 = >100%; mortality = 0%

Instructions (for below): Circle appropriate wording. If yes is circled, complete blanks.

Test Type: (Screen) (Static) Static Renewal / Flow-through

Test Duration: (48) 96 Hours.

Test 1 validation: **Test 1:** SOP TA 07- 01
Control survival ≥90%: (Yes) No
Temperature Range ≤3°C: (Yes) No

Test 2 validation: **Test 2:** SOP TA 07- 02
Control survival ≥90%: (Yes) No
Temperature Range ≤3°C: (Yes) No

Initial sample handling:

PH adjustment : yes (no) Initial pH: ____ NaOH N HCl N ____ Drops mL Final pH: ____

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 2.6 mL of 0.025N Sodium Thiosulfate per liter of sample. Final TRC: ____

Sample Validation:

Temperature: Shipped ≤6°C (Yes) No Hand Delivered: Cooling (received °C < collected °C) (Yes) No

Holding Time: ≤36 Hours (Yes) No (Composite-end of collection; grab-when collected; 4 in 24 - time last sample collected)

Light Intensity : 50 - 100 ft. candles

Photoperiod : 16 light 8 dark

Temperature Range °C:

Incubator # 2 min. 26.2 max. 26.5 mean 26.4

Incubator # ____ min. ____ max. ____ mean ____

Room B246 min. 24.2 max. 25.2 mean 24.7

Investigators' Signatures

James Daniel

Brian Bruce

Marshall Faircloth

Loretta C. Wolfe
REVIEWER

Water Quality Parameters	20% DMW	Moderately Hard Water/ (Well Water)	Salt Water ASW NSW Test 1	Salt Water ASW NSW Test 2	Other: Dechlorinated Sample	Original Sample	Method	Measured by	Verified by
Field Total Residual Cl_2 (mg/L):	N/A	N/A	N/A	N/A	—	5.04	Facility Meter	Facility operator	MF
Lab Total Residual Cl_2 (mg/L):	<0.03	<0.03			0.10	2.38	HACH	BA	JD
Alkalinity (mg/L as $CaCO_3$):	88	152			—	173	HACH	JD	BA
Hardness (mg/L as $CaCO_3$):	88	147			—	312	HACH	JD	BA
Total Ammonia (mg/L as N):	<0.017	<0.017			—	<0.017	DENVER	MF	JD
Salinity (ppth):	<1	<1			—	<1	YSI (Mettler)	MF	JD

V 1.4 8/12/05

Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1095008 Test #: 112 SOP#:TA 0701 Test Started: Date 4/15/08 Time: 15:30
Organism/Batch/Age: ceriodaphnia / 14-04 / <24hours Test Ended: Date 4/17/08 Time: 1230
Chamber/Test Volume: 30 / 20 ml Diluent/ Batch: DMW / 14-15-08
Food/Batch: YCT 3-26-07 P.sub 1-3/08 Artemia 0hr — 24hr — 48hr — 72hr — Artemia Lot# —
Feeding: Prior to Test / Prior to Renewal Daily
DCL = dechlorinated Ctrl = control

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Ctrl DCl	A	A	5	5	5			
	B	B	5	5	5			
	C	C	5	5	5			
	D	D	5	5	5			
100% DCl	A	A	5	5	4 ID			
	B	B	5	5	5			
	C	C	5	5	5			
	D	D	5	5	5			
Ctrl ~~DCl~~ BA	A	A	5	5 (A)	5			
	B	B	5	5 (A)	5			
	C	C	5	5 (A)	5			
	D	D	5	5 (A)	5			
~~DCl~~ BA 100%	A	A	5	0 (A) SD	-			
	B	B	5	0 (A) SD	-			
	C	C	5	0 (A) SD	-			
	D	D	5	0 (A) SD	-			

Loaded/Verified by: MF / BA Checked by: BA mf mf
m = missing d = dead BR/AR = Before/After Renewal
Test Results:
Comments:
(A) C. dubia dead within 35 minutes of loading mf 4-15-08 (A) In 100% sample Survival at 96hr+35 minutes recorded in 24 hour spaces. mf 4-16-08
Screening Tests: Report LC50 as >100%, =100%, or <100%.
% mortality in 100% sample: 100% LC50: <100%
If Calculated: 95% CI_____ Method_____
Substitue highest test concentration used if other than 100% (example: Ocean outfall tested at 30% concentration).
Dechlorinated sample 5% mortality LC50 >100% mf 4-21-08
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Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1095008 Test #: 7/2 SOP#:TA 07 07 Test Started: Date 4-15-08 Time: 1540
Organism/Batch/Age: C. dubia/4-15-08/12 hrs Test Ended: Date 4-17-08 Time: 1400
Chamber/Test Volume: 100 / 500 ml Diluent/ Batch: well / 4-14-08
Food/Batch: YCT — P.sub — Artemia 0hr 68-08 24hr — 48hr — 72hr — Artemia Lot# 651-536-90
Feeding (Prior to Test) Prior to Renewal Daily
DCL = dechlorinated Ctrl = control

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Dcl Ctrl	A	~~D17~~ F1	5	5	5			
	B	~~D18~~ F2	5	5	5			
	C	~~D19~~ F3	5	5	5			
	D	~~D20~~ F4	5	5	5			
Dcl 100%	A	~~D21~~ F5	5	5	5			
	B	~~D22~~ F6	5	5	5			
	C	~~D23~~ F7	5	5	5			
	D	~~D24~~ F8	5	5	5			
~~Dcl~~ 3A Ctrl	A	F9	5	5	5			
	B	F10	5	5	5			
	C	F11	5	5	5			
	D	F12	5	5	5			
100%	A	F13	5	0 SD	-			
	B	F14	5	0 SD	-			
	C	F15	5	0 SD	-			
	D	F16	5	0 SD	-			
assisted with loading LW initial by MF								

Loaded/Verified by: MF / LW Checked by: TA JD/MF BA
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%
If Calculated: 95% CI_____ Method_____
Substitue highest test concentration used if other than 100% (example: Ocean outfall tested at 30% concentration).

Comments: C. dubia cleared in 100% sample within 15 minutes of loading MF 4-15-08
(A) survival at 0 hour + 15 minutes recorded in 24 hour spaces. MF 4-16-08

Dechlorinated Sample 0% mortality
LC50 >100% MF 4-28-08

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FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 1095008 **Test #:** 1 of 2

TEST SOP #: TA07_01 **Test Species:** (*Ceriodaphnia dubia*) *Cyprinella leedsi* *Pimephales promelas* *Americamysis bahia* *Menidia beryllina* Other:_____

Concentration DCL Ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		A			
pH (S.U.)	8.2		8.1			
Temperature °C	24.0		24.9			
Dissolved Oxygen mg/L	7.7		7.2			
Conductivity (µmhos) mmhos	193		205			
(initials) Measured by:	BA		MF			
(initials) Recorded by:	BA		MF			

Comments: DCL = dechlorinated
CTRL = control

Concentration DCL 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		A			
pH (S.U.)	7.2		8.3			
Temperature °C	24.0		25.0			
Dissolved Oxygen mg/L	7.8		7.1			
Conductivity (µmhos) mmhos	1099		1103			
(initials) Measured by:	BA		MF			
(initials) Recorded by:	BA		MF			

Comments:

Concentration Ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M					
pH (S.U.)	8.2					
Temperature °C	24.0					
Dissolved Oxygen mg/L	7.8					
Conductivity (µmhos) mmhos	175					
(initials) Measured by:	BA					
(initials) Recorded by:	BA					

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M					
pH (S.U.)	7.2					
Temperature °C	24.0					
Dissolved Oxygen mg/L	7.8					
Conductivity (µmhos) mmhos	1099					
(initials) Measured by:	BA					
(initials) Recorded by:	BA					

Comments:
000029 all organisms in 100% sample dead within .35 minutes of loading MF 4-15-08

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FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 1095008 **Test #:** 2 of 2

TEST SOP #: TA07_02 **Test Species:** *Ceriodaphnia dubia* / *Cyprinella leedsi* / *Pimephales promelas* *Americamysis bahia* *Menidia beryllina* Other:_____

Concentration Dil Ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M	B	C			
pH (S.U.)	7.9	8.3	8.4			
Temperature °C	24.0	24.2	24.0			
Dissolved Oxygen mg/L	7.5	7.2	7.0			
Conductivity µmhos/ mmhos	290	299	301			
(initials) Measured by:	BA	JD	BA			
(initials) Recorded by:	BA	JD	BA			

Comments: DCL = dechlorinated

ctrl = control

Concentration Dil 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M	B	C			
pH (S.U.)	7.2	7.9	8.1			
Temperature °C	24.3	24.3	24.3 (4:08A)			
Dissolved Oxygen mg/L	7.6	7.0	6.8			
Conductivity µmhos/ mmhos	1099	1106	1127			
(initials) Measured by:	BA	JD	BA			
(initials) Recorded by:	BA	JD	BA			

Comments:

Concentration Ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M					
pH (S.U.)	7.8					
Temperature °C	24.0					
Dissolved Oxygen mg/L	7.6					
Conductivity µmhos/ mmhos	277					
(initials) Measured by:	BA					
(initials) Recorded by:	BA					

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M					
pH (S.U.)	7.2					
Temperature °C	24.3					
Dissolved Oxygen mg/L	7.7					
Conductivity µmhos/ mmhos	1087					
(initials) Measured by:	BA					
(initials) Recorded by:	BA					

Comments: all organisms in 100% sample dead within 15 minutes of loading - MF 4-15-08

000030

Appendix C. SRT Bench Sheets and Statistical Analysis

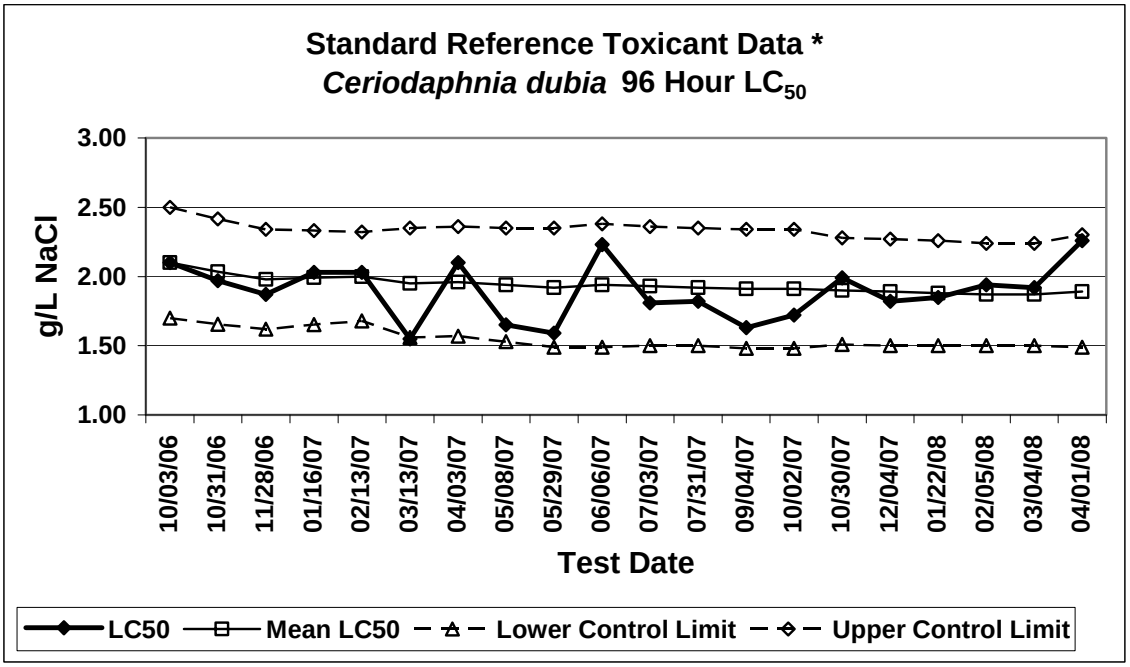
Florida Department of Environmental Protection
Bureau of Laboratories

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
10/03/06	2.10	2.10	0.20	1.70	2.50
10/31/06	1.97	2.04	0.19	1.66	2.42
11/28/06	1.87	1.98	0.18	1.62	2.34
01/16/07	2.03	1.99	0.17	1.65	2.33
02/13/07	2.03	2.00	0.16	1.68	2.32
03/13/07	1.55	1.95	0.20	1.56	2.35
04/03/07	2.10	1.96	0.19	1.57	2.36
05/08/07	1.65	1.94	0.20	1.53	2.35
05/29/07	1.59	1.92	0.22	1.49	2.35
06/06/07	2.23	1.94	0.22	1.49	2.38
07/03/07	1.81	1.93	0.22	1.50	2.36
07/31/07	1.82	1.92	0.21	1.50	2.35
09/04/07	1.63	1.91	0.22	1.48	2.34
10/02/07	1.72	1.91	0.21	1.48	2.34
10/30/07	1.99	1.90	0.19	1.51	2.28
12/04/07	1.82	1.89	0.19	1.50	2.27
01/22/08	1.85	1.88	0.19	1.50	2.26
02/05/08	1.94	1.87	0.18	1.50	2.24
03/04/08	1.92	1.87	0.18	1.50	2.24
04/01/08	2.26	1.89	0.20	1.49	2.30

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

CV = 10.68
EPA reference 75th quartile CV = 29%



Appendix C. (continued)

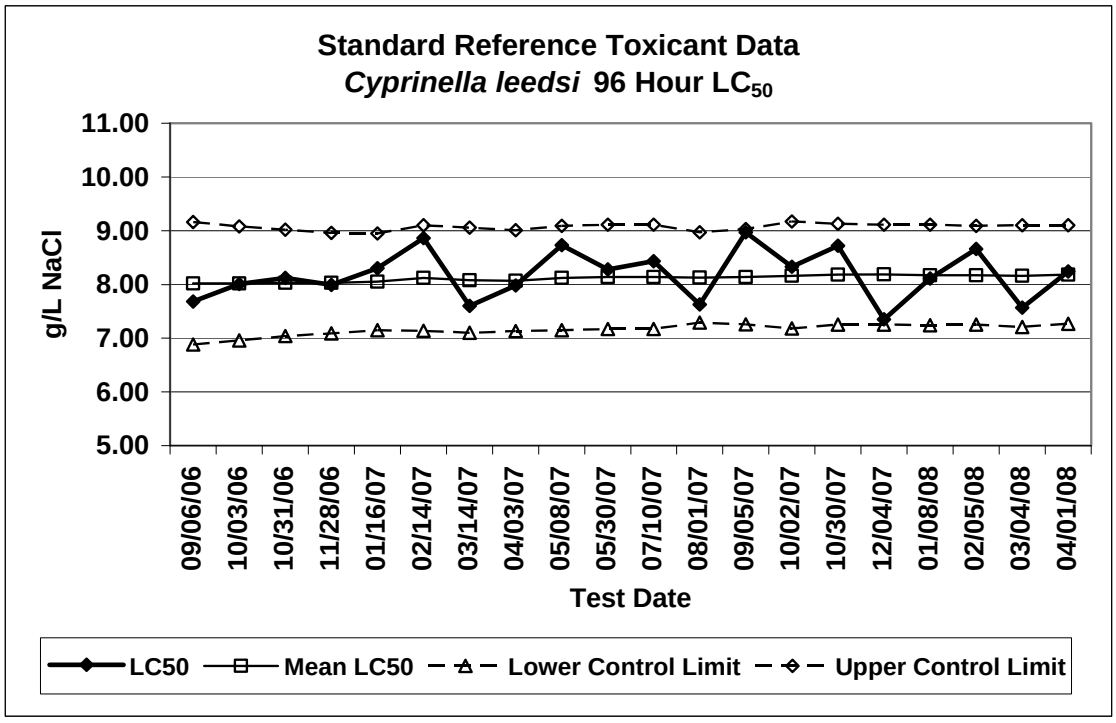
Florida Department of Environmental Protection
Bureau of Laboratories

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
09/06/06	7.68	8.02	0.57	6.88	9.16
10/03/06	8.01	8.02	0.53	6.96	9.08
10/31/06	8.12	8.03	0.49	7.04	9.02
11/28/06	7.99	8.03	0.47	7.09	8.96
01/16/07	8.30	8.05	0.45	7.15	8.95
02/14/07	8.86	8.12	0.49	7.14	9.10
03/14/07	7.60	8.08	0.49	7.10	9.06
04/03/07	7.98	8.07	0.47	7.13	9.01
05/08/07	8.73	8.12	0.48	7.15	9.09
05/30/07	8.28	8.14	0.48	7.17	9.11
07/10/07	8.43	8.14	0.48	7.17	9.11
08/01/07	7.63	8.13	0.42	7.29	8.97
09/05/07	8.97	8.14	0.44	7.26	9.03
10/02/07	8.33	8.16	0.50	7.18	9.17
10/30/07	8.72	8.18	0.47	7.25	9.13
12/04/07	7.35	8.19	0.47	7.25	9.11
01/08/08	8.11	8.17	0.47	7.24	9.11
02/05/08	8.66	8.17	0.47	7.25	9.09
03/04/08	7.57	8.16	0.47	7.21	9.10
04/01/08	8.24	8.18	0.46	7.27	9.10

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

CV = 5.61
EPA reference 75th quartile CV = 19%



Appendix C. (continued)

FDEP Biology Laboratory - Acute SRT Bench Sheet

Test Organism: *Americamysis bahia* Method 2007.0 | *Menidia beryllina* Method 2006.0 | *Hyalella azteca* Method 100.1 EPA-600-R-99-064
Ceriodaphnia dubia Method 2002.0 | *Cyprinella leedsi* Method 2000.0 | *Pimephales promelas* Method 2000.0 | Other: _____

Method from EPA-821-R-02-012
Test Type: 48 hour non-renewal / (96 hour renewal)
Test Page 1 of 2

Diluent/ Batch #: DMW / 4.1.08
Toxicant/ Batch#: NaCl / ~~133109~~ 4.1.08 SB

Test Beginning: Date: 4.1.08 Time: 13:15
Test Ending: Date: 4.5.08 Time: 11:30

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	JD
Alkalinity (mg/L as $CaCO_3$):	90	Hach	BA
Hardness (mg.L as $CaCO_3$):	81	Hach	BA
Total Ammonia (mg/L as N):	<0.017	Denver	NE
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 12-07 < 24hrs
Feeding: (Prior to test / Prior to renewal) Daily
Food: (YCT) (P.subcapitata) Artemia: Lot # –
Food Batch: 7-26-07 1-31-08 0hr – 24hr – 48hr – 72hr –
Chamber size: 30 mL
Test volume: 20 mL per replicate

Conc. (g/L) µg/L mg/L	Rep.	Chamber #	Number Live 0 hr / ~~48 hr~~	24 hr / ~~72 hr~~	48 hr / ~~96 hr~~	pH (SU) 0 hr / ~~48 hr~~	24 hr / ~~72 hr~~	48 hr / ~~96 hr~~	Temperature (°C) 0 hr / ~~48 hr~~	24 hr / ~~72 hr~~	48 hr / ~~96 hr~~	D.O. (mg/L) 0 hr / ~~48 hr~~	24 hr / ~~72 hr~~	48 hr / ~~96 hr~~	Uncorrected Conductivity µmhos/cm (mmhos/cm) 0 hr / ~~48 hr~~	24 hr / ~~72 hr~~	48 hr / ~~96 hr~~
Control	A	A	5	5	5	7.9		8.0	24.0		24.0	7.8		7.0	0.176		0.183
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	5												
1.5	A	A	5	5	5	8.0		7.9	24.0		24.0	7.8		7.1	2.11		3.07
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	5												
2.0	A	A	5	5	5	8.1		7.9	24.0		24.0	7.5		7.0	3.86		4.02
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	5												
2.5	A	A	5	5	3 3D	8.1		7.9	24.1		24.0	7.7		6.9	4.71		4.93
	B	B	5	5	3 2D												
	C	C	5	5	3 2D												
	D	D	5	4 1D	3 1D												
3.0	A	A	5	3 2D	0 3D	8.1		7.9	24.1		24.0	7.6		6.8	5.51		5.7
	B	B	5	4 1D	0 4D												
	C	C	5	3 2D	0 3D												
	D	D	5	4 1D	0 4D												
4.0	A	A	5	0 5D	–	8.1	8.0	–	24.2	24.0	–	7.7	7.7	–	7.25	7.19	–
	B	B	5	0 5D	–												
	C	C	5	0 5D	–												
	D	D	5	0 5D	–												
	A																
	B																
	C																
	D																
Loaded / measured by:			BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA
Recorded by:			BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA

Investigators' Signatures
Bill Aleb
James Daniel
Marshall Faircloth
Loretta C. Wolfe
REVIEWER

Concentrations prepared by: BA
Loading verified by: JD
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min 26.1 max 26.6 mean 26.4
Incubator # ___ min. ___ max. ___ mean ___
Room B248 min. 24.6 max 25.5 mean 25.0

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PAGE

Comments:

Statistics: Method: Spearman-Karber
48 / 96 hour LC_{50}: 2.5
95% Confidence Interval: lower 2.39 upper 2.62

revised 08/24/06 SP

Appendix C. (continued)

FDEP Biology Laboratory - Acute SRT Bench Sheet

Test Organism: *Americamysis bahia* Method 2007.0 / *Menidia beryllina* Method 2006.0 / *Hyalella azteca* Method 100.1 EPA-600-R-99-064
Ceriodaphnia dubia Method 2002.0 / *Cyprinella leedsi* Method 2000.0 / *Pimephales promelas* Method 2000.0 / Other: _____

Method from EPA-821-R-02-012
Test Type: 48 hour non-renewal / (96) hour renewal
Test Page 2 of 2

Diluent/ Batch #: DMW / 41.08
Toxicant/ Batch#: NaCl / 41.08

Test Beginning: Date: 4·1·08 Time: 13:15
Test Ending: Date: 4.5.08 Time: 11:30

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	22.3	Hach	JD
Alkalinity (mg/L as $CaCO_3$):	90	Hach	BA
Hardness (mg.L as $CaCO_3$):	81	Hach	BA
Total Ammonia (mg/L as N):	<0.017	Denver	MF
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 12-071 / 24 hrs
Feeding: Prior to test / Prior to renewal / Daily
Food: (YCT) (P.subcapitata) Artemia: Lot #____
Food Batch: 7·26·07 / 1·31·08 0hr — 24hr — 48hr — 72hr —
Chamber size: 30 mL
Test volume: 20 mL per replicate

Conc. g/L µg/L mg/L	Rep.	Chamber #	Number Live 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	pH (SU) 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	Temperature (°C) 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	D.O. (mg/L) 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	Uncorrected Conductivity µmhos/cm (mmhos/cm) 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr
Control	A	A	5	5	5	8.1		8.1	24.2		24.2	8.0		7.6	0.178		0.189
	B	B	5	5	5					24.2						0.184	
	C	C	5	5	5					JD						JD	
	D	D	5	5	5												
1.5	A	A	5	5	5	8.1		8.0	24.6		24.1	7.9		7.6	3.186		3.04
	B	B	5	5	5												
	C	C	5	5	4 JD												
	D	D	5	5	5												
2.0	A	A	5	5	5	8.1		8.1	24.7		24.1	7.7		7.6	3.78		3.89
	B	B	5	5	5												
	C	C	5	4 JD	4												
	D	D	5	5	5												
2.5	A	A	2	2	2	8.1		8.1	24.8		24.1	7.7		7.6	4.57		4.80
	B	B	3	1 JD	0 JD												
	C	C	3	2 JD	0 JD												
	D	D	3	2 JD	0 JD												
3.0	A	A	—	—	—	—		—	—		—	—		—	—		—
	B	B	—	—	—												
	C	C	—	—	—												
	D	D	—	—	—												
4.0	A	A	—	—	—	—		—	—		—	—		—	—		—
	B	B	—	—	—												
	C	C	—	—	—												
	D	D	—	—	—												
	A																
	B																
	C																
	D																
Loaded / measured by:			BA	BA	JD	BA		JD	BA		JD	BA		JD	BA		JD
Recorded by:			BA	BA	JD	BA		JD	BA		JD	BA		JD	BA		JD

Investigators' Signatures
Dave Hair
Tonya Davis
Marshall Faircloth
Krista C. Wolfe
REVIEWER

Concentrations prepared by: BA
Loading verified by: JD
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 3 min 26.1 max 26.6 mean 26.4
Incubator # ___ min. ___ max. ___ mean ___
Room B248 min. 24.6 max. 25.5 mean 25.0

Comments:

Statistics: Method: Spearman-Karber
48 / (96) hour LC_{50}: 2.26
95% Confidence Interval: lower 2.19 upper 2.32

Appendix C. (continued)

[redacted]

FDEP Biology Laboratory - Acute SRT Bench Sheet

Test Organism: *Americamysis bahia* Method 2007.0 | *Menidia beryllina* Method 2006.0 | *Hyalella azteca* Method 100.1 EPA-600-R-99-064
Ceriodaphnia dubia Method 2002.0 | *Cyprinella leedsi* Method 2000.0 | *Pimephales promelas* Method 2000.0 | *Other:* _____

Method from EPA-821-R-02-012
Test Type: 48 hour non-renewal / (96) hour renewal
Test Page 1 of 2

Diluent/ Batch #: Well H_2O / 3,31.08
Toxicant/ Batch#: NaCl / 3,31.08

Test Beginning: Date: 4.1.08 Time: 1500
Test Ending: Date: 4.5.08 Time: 1200

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	2003	Hach	JD
Alkalinity (mg/L as $CaCO_3$):	149	Hach	BA
Hardness (mg.L as $CaCO_3$):	133	Hach	BA
Total Ammonia (mg/L as N):	<0.017	Denver	MF
Salinity (ppth):	<1	Mettler	JD

Organism Batch #/ Age: 4.1.08 / 13 hrs
Feeding: (Prior to test / Prior to renewal) / Daily
Food: YCT *P.subcapitata* Artemia: Lot # GSL-536-90
Food Batch: — / — 0hr 57-58 24hr — 48hr 59-60 72hr ____
Chamber size: 1000 mL
Test volume: 500 mL per replicate

Conc.	Rep.	Chamber #	Number Live 0 hr / 24 hr / 48 hr (48 hr / 72 hr / 96 hr)	pH (SU) 0 hr / 24 hr / 48 hr (48 hr / 72 hr / 96 hr)	Temperature (°C) 0 hr / 24 hr / 48 hr (48 hr / 72 hr / 96 hr)	D.O. (mg/L) 0 hr / 24 hr / 48 hr (48 hr / 72 hr / 96 hr)	Uncorrected Conductivity µmhos/cm (mmhos/cm) 0 hr / 24 hr / 48 hr (48 hr / 72 hr / 96 hr)
µg/L mg/L							
Control	A	B1	10 / 10 / 10	8.0 / / 8.2	24.0 / / 24.7	7.7 / / 7.2	0.273 / / 0.282
	B	B2	10 / 10 / 10	/ 8.2 /	/ 24.3 /	/ 7.1 /	/ 0.278 /
	C						
	D						
6	A	B3	10 / 10 / 10	8.0 / / 8.1	24.0 / / 24.7	7.6 / / 6.9	11.6 / / 11.5
	B	B4	10 / 10 / 10	/ 8.1 /	/ 24.4 /	/ 7.0 /	/ 11.5 /
	C						
	D						
7	A	B5	10 / 10 / 10	8.0 / / 8.1	24.0 / / 24.7	7.6 / / 6.8	13.5 / / 13.3
	B	B6	10 / 10 / 9[10]	/ 8.0 /	/ 24.6 /	/ 6.5 /	/ 13.2 /
	C						
	D						
8	A	B7	10 / 7[10] / 7	8.0 / / 8.1	24.0 / / 24.9	7.6 / / 6.6	15.5 / / 15.2
	B	B8	10 / 6[10] / 6	/ 8.0 /	/ 24.4 /	/ 6.4 /	/ 15.0 /
	C						
	D						
9	A	B9	10 / 3[10] / 3	8.0 / / 8.1	24.0 / / 24.6	7.6 / / 6.6	16.8 / / 16.7
	B	B10	10 / 1[10] / 1	/ 8.0 /	/ 24.1 /	/ 6.5 /	/ 16.4 /
	C						
	D						
10	A	B11	10 / 0[10] / —	7.9 / /	24.0 / /	7.6 / /	18.7 / /
	B	B12	10 / 0[10] / —	/ 8.0 /	/ 24.5 /	/ 6.4 /	/ 18.3 /
	C						
	D						
	A						
	B						
	C						
	D						
Loaded / measured by:			BS / JD / JD	JD / JD / JD	JD / JD / JD	JD / JD / JD	JD / JD / JD
Recorded by:			JD / JD / JD	JD / JD / JD	JD / JD / JD	JD / JD / JD	JD / JD / JD

Investigators' Signatures
James Daniel
Brent Reeves
Marshall Faircloth
Loretta C. Wolfe
REVIEWER

Concentrations prepared by: JD
Loading verified by: MF
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min. 26.1 max. 26.6 mean 26.4
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min. 24.6 max. 25.5 mean 25.0

Comments:

Statistics: Method: Spearman-Karber
48 / 96 hour LC_{50}: 8.24
95% Confidence Interval: lower 7.15 upper 9.55

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revised 08/24/06 SP

Appendix C. (continued)

FDEP Biology Laboratory - Acute SRT Bench Sheet

Test Organism: *Americamysis bahia* Method 2007.0 · *Menidia beryllina* Method 2006.0 · *Hyalella azteca* Method 100.1 EPA-600-R-99-064 · *Ceriodaphnia dubia* Method 2002.0 · *Cyprinella leedsi* Method 2000.0 · *Pimephales promelas* Method 2000.0 · Other: _____

Method from EPA-821-R-02-012
Test Type: 48 hour non-renewal / 96 hour renewal
Test Page 2 of 2

Diluent/ Batch #: Well H2O / 133108
Toxicant/ Batch#: NaCl / 13308

Test Beginning: Date: 4/1/08 Time: 1500
Test Ending: Date: 4.5.08 Time: 1300

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	~~<0.1~~ <0.03	Hach	JD
Alkalinity (mg/L as $CaCO_3$):	144	Hach	BA
Hardness (mg.L as $CaCO_3$):	133	Hach	JD
Total Ammonia (mg/L as N):	<0.017	Denver	MF
Salinity (ppth):	31	Mettler	JD

TAL (JD) =2003

Organism Batch #/ Age: 4.1.08 / 13 days
Feeding: (Prior to test / Prior to renewal) Daily
Food: YCT / *P.subcapitata*
Food Batch: _____ / _____
Chamber size: 1000 mL
Test volume: 500 mL per replicate
Artemia: Lot # 651-536-90 0hr 37-08 24hr – 48hr 39-08 72hr –

Conc. g/L µg/L mg/L	Rep.	Chamber #	Number Live 0 hr / 24 hr / 48 hr / 48 hr / 72 hr / 96 hr	pH (SU) 0 hr / 24 hr / 48 hr / 48 hr / 72 hr / 96 hr	Temperature (°C) 0 hr / 24 hr / 48 hr / 48 hr / 72 hr / 96 hr	D.O. (mg/L) 0 hr / 24 hr / 48 hr / 48 hr / 72 hr / 96 hr	Uncorrected Conductivity µmhos/cm (mmhos/cm) 0 hr / 24 hr / 48 hr / 48 hr / 72 hr / 96 hr
Control	A	B1	10 / 10 / 10	8.1 / / 8.0	24.0 / / 24.5	7.6 / / 6.8	0.277 / / 0.283
	B	B2	10 / 10 / 10	/ 8.0 /	/ 25.0 /	/ 6.1 /	/ 0.285 /
	C						
	D						
6	A	B3	10 / 10 / 10	8.0 / / 8.0	24.0 / / 24.6	7.6 / / 6.4	11.3 / / 11.4
	B	B4	10 / 10 / 10	/ 7.9 /	/ 24.7 /	/ 5.9 /	/ 11.6 /
	C						
	D						(B)
7	A	B5	10 / 10 / 10	8.0 / / 8.0	24.0 / / 24.8	7.4 / / 6.3	113.6 / / 13.3
	B	B6	9 / 9 / 9	/ 7.9 /	/ 24.8 /	/ 5.9 /	/ 13.2 /
	C						
	D						
8	A	B7	7 / 7 / 7	8.0 / / 7.9	24.0 / / 24.9	7.3 / / 6.2	14.8 / / 15.0
	B	B8	6 / 6 / 6	/ 7.9 /	/ 24.6 /	/ 5.9 /	/ 15.1 /
	C						
	D						
9	A	B9	3 / 3 / 3	8.0 / / 8.0	24.0 / / 24.9	7.3 / / 6.0	16.4 / / 16.6
	B	B10	1 / 1 / 1	/ 7.9 /	/ 24.6 /	/ 5.8 /	/ 16.7 /
	C						
	D						
10	A	B11	– / – / –	– / / –	– / / –	– / / –	– / / –
	B	B12	– / – / –	/ – /	/ – /	/ – /	/ – /
	C						
	D						
	A						
	B						
	C						
	D						
Loaded / measured by:			JD / JD / JD	JD / JD / JD	JD / JD / JD	JD / JD / JD	JD / JD / JD
Recorded by:			JD / JD / JD	JD / JD / JD	JD / JD / JD	JD / JD / JD	JD / JD / JD

Investigators' Signatures
James Daniel
Brent Aziz
Marshall Faircloth
Loretta C. Wolfe
REVIEWER

Concentrations prepared by: JD
Loading verified by: MF
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min 26.1 max 26.6 mean 26.4
Incubator # ___ min ___ max ___ mean ___
Room B246 min 24.6 max 25.5 mean 25.0

Comments:

Statistics: Method: Spearman-Karber
48 / (96) hour LC_{50}: 8.24
95% Confidence Interval: lower 7.95 upper 8.55

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Appendix C. (continued)

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

DATE: 4-1-08 DURATION: 96 hr TOXICANT : NaCl
SPECIES: *Ceriodaphnia dubia*

RAW DATA:	Concentration (g/L)	Number Exposed	Mortalities
	0.00	20	0
	1.50	20	1
	2.00	20	1
	2.50	20	18
	3.00	20	20
	4.00	20	20

SPEARMAN-KARBER TRIM: 5.00%

SPEARMAN-KARBER ESTIMATES: **LC50: 2.26**
95% LOWER CONFIDENCE: 2.19
95% UPPER CONFIDENCE: 2.32

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

DATE: 4-1-08 DURATION: 96 hr TOXICANT : NaCl
SPECIES: *Cyprinella leedsi*

RAW DATA:	Concentration (g/L)	Number Exposed	Mortalities
	0.00	20	0
	6.00	20	0
	7.00	20	1
	8.00	20	7
	9.00	20	16
	10.00	20	20

SPEARMAN-KARBER TRIM: 7.50%

SPEARMAN-KARBER ESTIMATES: **LC50: 8.24**
95% LOWER CONFIDENCE: 7.95
95% UPPER CONFIDENCE: 8.55

Appendix D. Test Organism Receipt

MBL Aquaculture
4569 Samuel Street
Sarasota, Florida 34233
TEL: (800) 889-0384
FAX: (941) 922-3874
EMAIL: sales@mblaquaculture.com
WEB: www.MBLAquaculture.com

NELAC Accredited

Organism Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Date: 3/31/08

Shipped to: FDEP

P.O. No: N/A

Species	Quantity	Age	Brood Number	Temperature	Salinity
Mysidopsis bahia	150	4 DAYS	MS080327	25°C	20‰
Menidia beryllina	150	12DAYS	SS080319	25°C	20‰
Cyprinella leedsi	200	12DAYS	CL080319	25°C	
Pimephales promelas	150	8 DAYS	FM080323	25°C	

Packed by: CJ

Shipped Via: Fed Ex

Notes:

Thank you for your order.

Appendix D. (continued)

MBL Aquaculture
4569 Samuel Street
Sarasota, Florida 34233
TEL: (800) 889-0384
FAX: (941) 922-3874
EMAIL: sales@mblaquaculture.com
WEB: www.MBLAquaculture.com

NELAC Accredited

Organism Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Date: 4/14/08

Shipped to: FDEP

P.O. No: N/A

Species	Quantity	Age	Brood Number	Temperature	Salinity
Mysidopsis bahia					
Menidia beryllina					
Cyprinella leedsi	100	11 DAYS	CL080403	25°C	
Pimephales promelas					

Packed by: [signature]

Shipped Via: Fed Ex

Notes: _____

Thank you for your order.

Appendix E. Chemical Analyses performed on the effluent from the Innlet Beach Wastewater Treatment Facility NPDES sampling point (EFD-1) for Outfall D-001, sampled on April 14, 2008.

Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
Effluent	AGP/LN	Algal Growth Potential-Salinity Adjusted	3	U	mg DryWt/L	3	3
Effluent	AGP/LN	Algal Growth Potential	304		mg DryWt/L	0.3	0.9
Effluent	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	4.6		mg/L	0.2	2
Effluent	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.55	U	ug/L	0.55	1.7
Effluent	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.24	U	ug/L	0.24	0.71
Effluent	Overflow	Fecal Coliforms-Membrane Filter	1	U	#/100 mL		
Effluent	Toxicology	Bioassay-Acute-Scrn-FW-Fish,LC50-dechlr	100	L	LC50		
Effluent	Toxicology	Bioassay-Acute-Screen-FW-Fish, LC50	100	K	LC50		
Effluent	Toxicology	Bioassy-Acute-Scrn-FW-Cdubia,LC50-dechlr	100	L	LC50		
Effluent	Toxicology	Bioassay-Acute-Screen-FW-C.dubia, LC50	100	K	LC50		
Effluent	Metals	Aluminum	60	U	ug/L	60	240
Effluent	Metals	Magnesium	30.8		mg/L	0.04	0.16
Effluent	Metals	Zinc	61		ug/L	5	20
Effluent	Metals	Chromium	1	U	ug/L	1	4
Effluent	Metals	Arsenic	0.5	U	ug/L	0.5	2
Effluent	Metals	Lead	0.2	U	ug/L	0.2	0.8
Effluent	Metals	Iron	55	I	ug/L	30	120
Effluent	Metals	Cadmium	0.02	U	ug/L	0.02	0.08
Effluent	Metals	Nickel	0.9	I	ug/L	0.25	1
Effluent	Metals	Calcium	76.2		mg/L	0.075	0.3
Effluent	Metals	Selenium	0.5	U	ug/L	0.5	2
Effluent	Metals	Silver	0.025	U	ug/L	0.025	0.1
Effluent	Metals	Copper	1.8	I	ug/L	0.5	2
Effluent	Nutrients	Ammonia-N	0.054		mg N/L	0.01	0.02
Effluent	Nutrients	O-Phosphate-P	2.8		mg P/L	0.12	0.3
Effluent	Nutrients	TSS	4	U	mg/L	4	16
Effluent	Nutrients	NO2NO3-N	6		mg N/L	0.04	0.1
Effluent	Nutrients	Total-P	3.3		mg P/L	0.08	0.24
Effluent	Nutrients	Kjeldahl Nitrogen	1.6		mg N/L	0.16	0.4
Effluent	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2

Appendix E. (continued)

Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
Effluent	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2
Effluent	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
Effluent	Pesticides	Chlorpyrifos Methyl	0.1	U	ug/L	0.1	0.4
Effluent	Pesticides	Bromacil	0.2	U	ug/L	0.2	0.8
Effluent	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6
Effluent	Pesticides	Parathion Methyl	0.1	U	ug/L	0.1	0.4
Effluent	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8
Effluent	Pesticides	Alachlor	0.6	U	ug/L	0.6	2.4
Effluent	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
Effluent	Pesticides	Butylate	0.2	U	ug/L	0.2	0.8
Effluent	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	1
Effluent	Pesticides	Fonofos	0.1	U	ug/L	0.1	0.4
Effluent	Pesticides	Diazinon	0.05	U	ug/L	0.05	0.2
Effluent	Pesticides	Phorate	0.05	U	ug/L	0.05	0.2
Effluent	Pesticides	Naled	0.8	U	ug/L	0.8	3.2
Effluent	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.8
Effluent	Pesticides	Metolachlor	0.5	U	ug/L	0.5	2
Effluent	Pesticides	Azinphos Methyl	0.2	UJ	ug/L	0.2	0.8
Effluent	Pesticides	Atrazine	0.36		ug/L	0.05	0.2
Effluent	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
Effluent	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
Effluent	Pesticides	Metribuzin	0.1	U	ug/L	0.1	0.4
Effluent	Pesticides	Hexazinone	0.1	U	ug/L	0.1	0.4
Effluent	Pesticides	Ethoprop	0.1	U	ug/L	0.1	0.4
Effluent	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
Effluent	Priority Organic Pollutants	2,4-Dimethylphenol	9.9	U	ug/L	9.9	40
Effluent	Priority Organic Pollutants	4,4'-DDE	1.5	U	ug/L	1.5	5.9
Effluent	Priority Organic Pollutants	Anthracene	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3	U	ug/L	3	12
Effluent	Priority Organic Pollutants	Dieldrin	1.5	U	ug/L	1.5	5.9
Effluent	Priority Organic Pollutants	Hexachlorobutadiene	3	U	ug/L	3	12
Effluent	Priority Organic Pollutants	Hexachlorocyclopentadiene	3	U	ug/L	3	12
Effluent	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2	U	ug/L	2	7.9
Effluent	Priority Organic Pollutants	Nitrobenzene	2	U	ug/L	2	7.9

Appendix E. (continued)

Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
Effluent	Priority Organic Pollutants	2,4-Dinitrophenol	15	U	ug/L	15	59
Effluent	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2	U	ug/L	2	7.9
Effluent	Priority Organic Pollutants	Acenaphthylene	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	Benzo(a)anthracene	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	Benzo(b)fluoranthene	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	Benzo(k)fluoranthene	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	Butyl benzyl phthalate	5	U	ug/L	5	20
Effluent	Priority Organic Pollutants	Di-n-butyl phthalate	5	U	ug/L	5	20
Effluent	Priority Organic Pollutants	Endosulfan I	4	U	ug/L	4	16
Effluent	Priority Organic Pollutants	Endosulfan II	4	U	ug/L	4	16
Effluent	Priority Organic Pollutants	Endrin	1.5	U	ug/L	1.5	5.9
Effluent	Priority Organic Pollutants	Isophorone	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3	U	ug/L	3	12
Effluent	Priority Organic Pollutants	4,4'-DDD	1.5	U	ug/L	1.5	5.9
Effluent	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.99	UJ	ug/L	0.99	4
Effluent	Priority Organic Pollutants	Fluoranthene	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	N-Nitrosodimethylamine	2	U	ug/L	2	7.9
Effluent	Priority Organic Pollutants	Phenanthrene	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	delta-BHC	1.5	U	ug/L	1.5	5.9
Effluent	Priority Organic Pollutants	2,4-Dichlorophenol	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	2-Nitrophenol	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	Chrysene	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	Fluorene	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	Heptachlor epoxide	1.5	U	ug/L	1.5	5.9
Effluent	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	Pentachlorophenol	3	U	ug/L	3	12
Effluent	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	2,6-Dinitrotoluene	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	3,3'-Dichlorobenzidine	40	UJ	ug/L	40	160
Effluent	Priority Organic Pollutants	4,4'-DDT	1.5	U	ug/L	1.5	5.9
Effluent	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.99	U	ug/L	0.99	4

Appendix E. (continued)

Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
Effluent	Priority Organic Pollutants	Benzo(a)pyrene	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	Endosulfan sulfate	1.5	U	ug/L	1.5	5.9
Effluent	Priority Organic Pollutants	Pyrene	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	alpha-BHC	1.5	U	ug/L	1.5	5.9
Effluent	Priority Organic Pollutants	2-Chloronaphthalene	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	59
Effluent	Priority Organic Pollutants	Benzidine	99	U	ug/L	99	400
Effluent	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	15	U	ug/L	15	59
Effluent	Priority Organic Pollutants	Diethyl phthalate	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	Dimethyl phthalate	9.9	U	ug/L	9.9	40
Effluent	Priority Organic Pollutants	Endrin aldehyde	4	UJ	ug/L	4	16
Effluent	Priority Organic Pollutants	Heptachlor	1.5	U	ug/L	1.5	5.9
Effluent	Priority Organic Pollutants	Hexachlorobenzene	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	Hexachloroethane	3	U	ug/L	3	12
Effluent	Priority Organic Pollutants	Phenol	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	Acenaphthene	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	Aldrin	1.5	U	ug/L	1.5	5.9
Effluent	Priority Organic Pollutants	Di-n-octyl phthalate	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	2,4-Dinitrotoluene	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	2-Chlorophenol	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	Naphthalene	0.99	U	ug/L	0.99	4
Effluent	Priority Organic Pollutants	beta-BHC	1.5	U	ug/L	1.5	5.9
Effluent	Priority Organic Pollutants	gamma-BHC	1.5	U	ug/L	1.5	5.9
Effluent	Field Parameter	pH	6.69				
Effluent	Field Parameter	Temperature	23.08		C		
Effluent	Field Parameter	Dissolved Oxygen	5.4		mg/L		
Effluent	Field Parameter	Specific Conductance	1058		umhos/cm		
Effluent	Field Parameter	Total Residual Chlorine	5.04		mg/L		
Blank	Metals	Calcium	0.075	U	mg/L	0.075	0.3
Blank	Metals	Cadmium	0.02	U	ug/L	0.02	0.08
Blank	Metals	Magnesium	0.04	U	mg/L	0.04	0.16
Blank	Metals	Copper	0.5	U	ug/L	0.5	2

Appendix E. (continued)

Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
Blank	Metals	Zinc	5	U	ug/L	5	20
Blank	Metals	Arsenic	0.5	U	ug/L	0.5	2
Blank	Metals	Selenium	0.5	U	ug/L	0.5	2
Blank	Metals	Silver	0.025	U	ug/L	0.025	0.1
Blank	Metals	Chromium	1	U	ug/L	1	4
Blank	Metals	Lead	0.2	U	ug/L	0.2	0.8
Blank	Metals	Iron	30	U	ug/L	30	120
Blank	Metals	Aluminum	60	U	ug/L	60	240
Blank	Metals	Nickel	0.25	U	ug/L	0.25	1
Blank	Nutrients	Total-P	0.02	U	mg P/L	0.02	0.06
Blank	Nutrients	NO2NO3-N	0.006	I	mg N/L	0.004	0.01
Blank	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
Blank	Nutrients	Kjeldahl Nitrogen	0.08	U	mg N/L	0.08	0.2
Blank	Nutrients	O-Phosphate-P	0.066		mg P/L	0.004	0.01
Blank	Nutrients	TSS	4	U	mg/L	4	16
Blank	Pesticides	Bromacil	0.2	U	ug/L	0.2	0.8
Blank	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2
Blank	Pesticides	Diazinon	0.05	U	ug/L	0.05	0.2
Blank	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
Blank	Pesticides	Ethoprop	0.1	U	ug/L	0.1	0.4
Blank	Pesticides	Naled	0.8	U	ug/L	0.8	3.2
Blank	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
Blank	Pesticides	Hexazinone	0.1	U	ug/L	0.1	0.4
Blank	Pesticides	Butylate	0.2	U	ug/L	0.2	0.8
Blank	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6
Blank	Pesticides	Metribuzin	0.1	U	ug/L	0.1	0.4
Blank	Pesticides	Metolachlor	0.5	U	ug/L	0.5	2
Blank	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	1
Blank	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8
Blank	Pesticides	Phorate	0.05	U	ug/L	0.05	0.2
Blank	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2
Blank	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
Blank	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
Blank	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6

Appendix E. (continued)

Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
Blank	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.8
Blank	Pesticides	Chlorpyrifos Methyl	0.1	U	ug/L	0.1	0.4
Blank	Pesticides	Azinphos Methyl	0.2	UJ	ug/L	0.2	0.8
Blank	Pesticides	Parathion Methyl	0.1	U	ug/L	0.1	0.4
Blank	Pesticides	Fonofos	0.1	U	ug/L	0.1	0.4
Blank	Pesticides	Alachlor	0.6	U	ug/L	0.6	2.4
Blank	Pesticides	Atrazine	0.05	U	ug/L	0.05	0.2
Blank	Priority Organic Pollutants	2,4-Dichlorophenol	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.7	U	ug/L	3.7	15
Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.7	U	ug/L	3.7	15
Blank	Priority Organic Pollutants	Chrysene	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	Dimethyl phthalate	12	U	ug/L	12	49
Blank	Priority Organic Pollutants	Hexachlorobenzene	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	Isophorone	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	Pentachlorophenol	3.7	U	ug/L	3.7	15
Blank	Priority Organic Pollutants	Anthracene	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	Benzo(a)anthracene	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	Di-n-butyl phthalate	6.1	U	ug/L	6.1	24
Blank	Priority Organic Pollutants	Di-n-octyl phthalate	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	Endosulfan I	4.9	U	ug/L	4.9	20
Blank	Priority Organic Pollutants	Endosulfan II	4.9	U	ug/L	4.9	20
Blank	Priority Organic Pollutants	Fluorene	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	Heptachlor	1.8	U	ug/L	1.8	7.3
Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.4	U	ug/L	2.4	9.8
Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	2.4	U	ug/L	2.4	9.8
Blank	Priority Organic Pollutants	beta-BHC	1.8	U	ug/L	1.8	7.3
Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	4,4'-DDE	1.8	U	ug/L	1.8	7.3
Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	Endosulfan sulfate	1.8	U	ug/L	1.8	7.3
Blank	Priority Organic Pollutants	Heptachlor epoxide	1.8	U	ug/L	1.8	7.3

Appendix E. (continued)

Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
Blank	Priority Organic Pollutants	Phenol	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	49	UJ	ug/L	49	200
Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.4	U	ug/L	2.4	9.8
Blank	Priority Organic Pollutants	Acenaphthylene	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	Aldrin	1.8	U	ug/L	1.8	7.3
Blank	Priority Organic Pollutants	Benzo(a)pyrene	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	Butyl benzyl phthalate	6.1	U	ug/L	6.1	24
Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	Diethyl phthalate	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	Phenanthrene	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	delta-BHC	1.8	U	ug/L	1.8	7.3
Blank	Priority Organic Pollutants	gamma-BHC	1.8	U	ug/L	1.8	7.3
Blank	Priority Organic Pollutants	2-Nitrophenol	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	4,4'-DDT	1.8	U	ug/L	1.8	7.3
Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	Endrin	1.8	U	ug/L	1.8	7.3
Blank	Priority Organic Pollutants	Fluoranthene	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.7	U	ug/L	3.7	15
Blank	Priority Organic Pollutants	2,4-Dimethylphenol	12	U	ug/L	12	49
Blank	Priority Organic Pollutants	2,4-Dinitrophenol	18	U	ug/L	18	73
Blank	Priority Organic Pollutants	2-Chloronaphthalene	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	Acenaphthene	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	Nitrobenzene	2.4	U	ug/L	2.4	9.8
Blank	Priority Organic Pollutants	Pyrene	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	alpha-BHC	1.8	U	ug/L	1.8	7.3
Blank	Priority Organic Pollutants	Benzidine	120	U	ug/L	120	490
Blank	Priority Organic Pollutants	Hexachlorobutadiene	3.7	U	ug/L	3.7	15
Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	Naphthalene	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	2-Chlorophenol	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	4,4'-DDD	1.8	U	ug/L	1.8	7.3

Appendix E. (continued)

Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
Blank	Priority Organic Pollutants	4-Nitrophenol	18	U	ug/L	18	73
Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	1.2	U	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	1.2	UJ	ug/L	1.2	4.9
Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	18	U	ug/L	18	73
Blank	Priority Organic Pollutants	Dieldrin	1.8	U	ug/L	1.8	7.3
Blank	Priority Organic Pollutants	Endrin aldehyde	4.9	UJ	ug/L	4.9	20
Blank	Priority Organic Pollutants	Hexachloroethane	3.7	U	ug/L	3.7	15

Appendix F. Bioassay Lab Instruments

Facility ID: Innlet Beach WWTF Test Dates: April 15 -17, 2008

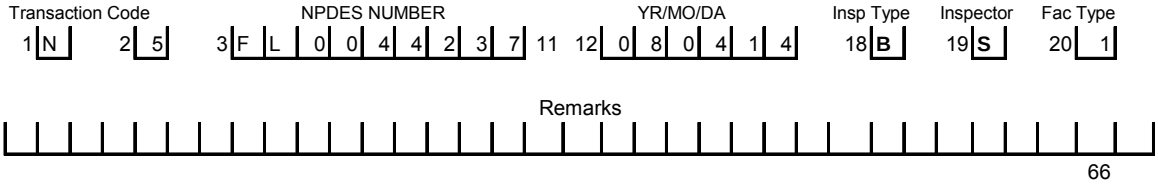
METER / DEVICE	ID	SOP	Parameter	Method	√ used
YSI Model 58 Dissolved Oxygen Meter	90H018262	TA06_04	Dissolved Oxygen	SM 4500 O G	√
Accumet AR-10 pH Meter	93312105	TA06_23	pH	SM 4500 H^+	√
Mettler-Toledo SevenMulti Conductivity Meter	SN 1225117049 Probe H04257	TA06_25	Conductivity Salinity	SM 2510 B SM 2520 B	√
Denver Model 225 ISE with ammonia probe	SN K01377	TA06_17	Ammonia	SM 4500 NH3 F	√
Thermometer (DO probe)	YSI 5750 SN 05J1720	TA06_05	Temperature	SM-2530B modified DEP SOP-001/01 FT1400	√
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 electronic and non-mercury filled thermometers.
Insert other device information in blank spaces(if used). Test ID = Facility or SRTs (acute SRT--Chronic SRT)

V 1.1 6/12/08 MF

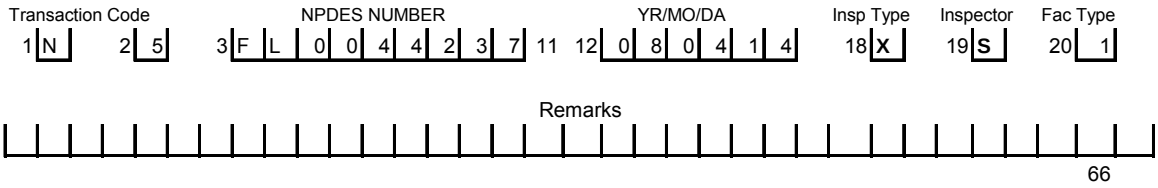
The Bioassay of the Innlet Beach Wastewater Treatment Facility effluent sampled on April 14, 2008. NPDES #FL0044237.

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



The Priority Pollutants Analysis of the Innlet Beach Wastewater Treatment Facility effluent sampled on April 14, 2008. NPDES #FL0044237.

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



Biological Analyses of the Innlet Beach Wastewater Treatment Facility effluent sampled on April 14, 2008. NPDES #FL0044237.

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

