

Effluent Quality Assessment

Atlantic Dry Dock WWTF

Duval County

NPDES #FL0040592

Sampled May 5, 2008

September 2008

Biology Section
Bureau of Laboratories
Division of Environmental Assessment and Restoration

Quality Manual No. 870346G
NELAC Certification No. E31780

Atlantic Dry Dock WWTF, 8500 Heckscher Drive, Jacksonville, Duval County, Florida, 32226. NPDES #FL0040592. Effluent samples for this facility were collected on May 5, 2008.

Introduction

Atlantic Dry Dock wastewater treatment facility (WWTF) uses the extended-aeration treatment process to treat domestic wastewater. The facility has a design capacity of 0.060 million gallons per day (MGD) annual average daily flow (AADF). The AADF through the facility from May 2007 through April 2008 was 0.0107 MGD. The wastewater treatment system consists of:

- one influent and one surge tank for flow equalization;
- seven aeration tanks;
- two secondary clarifiers;
- two aerobic digesters;
- three ultraviolet disinfection units; and
- chlorination and dechlorination equipment for backup disinfection.

Dewatered residuals are transported to American Water Services, Inc., for further treatment and disposal. Treated effluent is discharged continuously to the Class III Marine waters of the St. Johns River at Outfall D-001. Outfall D-001 is approximately 30.5 m (100 feet) in length and discharges at a depth of approximately 0.06 m (0.2 feet). The point of discharge is located approximately at latitude 30º 22' 12" N, longitude 81º 27' 36" W.

The facility is also permitted to discharge stormwater from the site through eleven (11) stormwater outfalls. The stormwater outfalls, which discharge stormwater associated with industrial activity into the St. Johns River, are placed into three groups (S-001, S-002 and S-003).

The facility has no Administrative Orders, Consent Orders or mixing zones. A review of Discharge Monitoring Report (DMR) data for the past year, revealed only one permit violation (10/31/2007 – CBOD% Removal 5 day value 66.312 mg/L; permitted value ≤ 60 mg/L). The DMR review found the facility to be operating within permitted limits except as noted above for CBOD. The facility is having an issue with effluent copper concentrations exceeding the Class III Marine water quality criterion for copper. To resolve this problem, the facility has agreed to apply for a significant permit modification within 120 days to have the domestic waste (DW) discharge go to the industrial waste (IW) land application system. They would no longer discharge into the St. Johns River, but will retain the D-001 discharge into the river as an emergency backup. The facility has no permitted toxicity test requirements.

A third year inspection (FYI3) performed in April 2005 showed that effluent samples were not acutely toxic to the test species in acute toxicity 48-hour bioassay tests. The effluent AGP exceeded the "problem" threshold for marine waters. Copper, nickel and total residual chlorine concentrations exceeded their respective Class III Marine water quality criteria. (Facility information provided by Herndon Sims of FDEP Northeast District.)

Methods

Samples were collected from the EFD-1 NPDES sampling point (sampling manhole for the effluent discharge to surface water) for Outfall D-001 by Herndon Sims (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 acute screening toxicity tests and algal growth potential test were performed following internal DEP SOPs TA07_03, TA07_04, 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. The Department uses the 48-hour acute screening test to provide reasonable assurance that the facility does not adversely affect waters of the state.

An aliquot of the bioassay sample was salinity-adjusted from an apparent salinity of approximately 2.5 parts per thousand (ppth) to a salinity of approximately 7.5 ppth using 40 Fathoms® artificial sea salts for the *Americamysis bahia* test. The salinity of the bioassay sample was not adjusted for the *Menidia beryllina* test. The salt control used for the *A. bahia* tests was prepared by diluting 20 ppth artificial seawater (ASW) with well water to a salinity of approximately 2.5 ppth then salting this solution with artificial sea salts to match the salinity of the test solution (approximately 7.5 ppth). The purpose of the salt control was to confirm that there was no effect of adding artificial sea salts to the sample. There was no mortality in the salt controls of the *Americamysis bahia* test.

The AGP sample was salinity adjusted to meet the minimum salinity requirements of the test species.

Toxicity Test Results

Tests were performed May 6 - 8, 2007.

Americamysis bahia 48-hour acute screening bioassay –	LC_{50} > 100%, 5% mortality* in 100% sample at 48 hours
Menidia beryllina 48-hour acute screening bioassay –	LC_{50} > 100%, 5% mortality* in 100% sample at 48 hours

The 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 66.4 mg dry wt/L of the saltwater species *Dunaliella tertiolecta.* Raschke and Shultz found that AGP values above 10.0 mg dry weight/L represent a "problem" threshold for marine receiving waters, implying nutrient enrichment (personal communication with Ron Raschke USEPA Region 4, 1987). The analytical chemistry suggests that the effluent is nitrogen-limited (Maloney et al. 1978).

Due to the apparent salinity of the sample, an AGP test with the freshwater species, *Pseudokirchneriella subcapitata*, was not performed. However, an inference can be made that the freshwater problem threshold of 5 mg dry wt/L (Raschke and Schultz, 1987) would have also been exceeded.

See Table 1 for AGP results.

Chemistry and Microbiology Results

Total residual chlorine (TRC) (0.43 mg/L) was detected in the effluent in the field. This concentration exceeded both the Class III marine criterion for total residual chlorine (≤ 0.01 mg/L; 62-302.530(18), F.A.C.) and the permitted limit for the EFD-1 NPDES sampling point (≤ 0.01 mg/L; NPDES permit FL0040592). TRC (0.04 mg/L) was also detected in the bioassay sample in the laboratory. Total ammonia was not detected in the bioassay sample in the laboratory. The total ammonia concentration in the sample collected and preserved for chemical analysis was 0.076 mg/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was < 0.02 mg/L.

Cadmium and iron were detected in the effluent at levels that comply with Class III marine water quality criteria (62-302.530, F.A.C.). The effluent copper (90.6 µg/L), nickel (40.1 µg/L) and zinc (106 µg/L) measurements exceeded Class III Marine water quality criteria which are ≤ 3.7 µg/L; 62-302.530(24), F.A.C., ≤ 8.3 µg/L; 62-302.530(45), F.A.C., and ≤ 86 µg/L; 62-302.530(71), F.A.C., respectively. Arsenic and lead were detected between the laboratory method detection limit (MDL) and practical quantitation limit (PQL).

Effluent Fecal Coliforms (6,000 Z) exceeded both the Class III Marine single sample criterion (≤ 800 number /100mL; 62-302.530(6), F.A.C.) and the facility's permitted single sample limit (≤ 800 number /100mL).

Z – Colonies were to numerous to count (TNTC).

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. See Appendix F for bioassay lab equipment.

Conclusion

The effluent sample collected from the EFD-1 NPDES sampling point for Outfall D-001 for this facility on May 5, 2008, was not acutely toxic to either test species during the 48-hour acute screening bioassays. The effluent AGP result greatly exceeded the "problem" threshold for marine receiving waters, suggesting nutrient enrichment may be an issue. Effluent copper, nickel, zinc, TRC, and fecal coliforms exceeded their respective Class III Marine water quality and/or permit limit. During the FYI3 inspection performed in April 2005, effluent copper, nickel and TRC exceeded their respective Class III Marine water quality criterion.

Literature Cited

Maloney, T. E., W. E. Miller, and D. T. Specht. 1974. The Marine Algal Assay Procedure: Bottle Test. National Environmental Research Center Office of Research and Development. U. S. EPA, Corvallis, Oregon. 43 p.

Table 1. Measured algal growth potential (AGP; mg dry weight/L) of the saltwater species *Dunaliella tertiolecta* and ratios of nitrogen to phosphorus for a sample of effluent collected from the Atlantic Dry Dock WWTF facility on May 5, 2008.

Atlantic Dry Dock WWTF			
Location	**AGP (measured)**	**Inorganic N:P ratio**	**Total N:P ratio**
Effluent*	66.3	4.0	3.8

* Sample salinity adjusted to 7 ppth salinity.

Table 2. Effluent limits, Class III Criteria for predominantly marine waters and chemical and microbiological data for samples collected from the Atlantic Dry Dock WWTF facility on May 5, 2008.

Atlantic Dry Dock WWTF NPDES# FL0040592	Class III Criteria	Effluent Limits	Effluent	
Organic Constituents (µg/L)				
None Detected	-	-	None Detected	
Metals (µg/L unless otherwise noted)				
Aluminum	≤ 1,500	-	60	U
Arsenic	≤ 50	-	0.52	I
Cadmium	≤ 8.8	-	0.14	
Calcium (mg/L)	-	-	78.6	
Chromium-III	-	-	1	U
Copper	≤ 3.7	Report	90.6	
Iron	≤ 300	-	210	
Lead	≤ 8.5	-	0.4	I
Magnesium (mg/L)	-	-	103	
Nickel	≤ 8.3	-	40.1	
Selenium	≤ 71	-	0.5	U
Silver	≤ 2.3	-	0.025	U
Zinc	≤ 86	-	106	
Nutrients (mg/L)				
Ortho-phosphate	-	Report	7.6	A
Total Phosphorus	-	Report	8.3	
Total Ammonia	-	-	0.076	
Un-ionized Ammonia	-	-	≤ 0.02	c
Nitrate and Nitrite	-	Report	30	
Total Kjeldahl Nitrogen	-	Report	1.4	J
Organic Nitrogen	-	Report	1.324	c
Total Nitrogen	-	Report	31.4	c
General Physical and Chemical Parameters				
Dissolved Oxygen (mg/L)	≥ 4.0	≥ 5.0 s	8.7	
pH (SU)	6.5 - 8.5	6.5 - 8.5 s	6.8	
Conductivity (µmhos/cm)	-	-	4,720	
Temperature °C	-	-	24.5	
Salinity	-	-	2.5	c
Total Residual Chlorine (mg/L)	≤ 0.01	≤ 0.01 s	0.43	
Chlorophyll a (µg/L) - Corrected	-	-	0.55	U
Phaeophytin (µg/L)	-	-	0.24	U
Total Suspended Solids (mg/L)	-	≤ 60 s	5	I
CBOD, 5 day (mg/L), N - inhibited	-	≤ 60 s	4.4	
Flow (MGD)	-	≤ 0.06 a	0.0109	a
Hardness (mg $CaCO_3$)	-	-	620.42	c
Microbiology (Number of colony forming units/100ml)				
Fecal Coliforms	≤ 400s [#]	≤ 800 s	6,000	Z

Value exceeds the Class III Water Quality Criteria or permit limits

a - Annual average
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
U - Material analyzed for but not detected; value reported is the method detection limit
Z - Colonies were too numerous to count (TNTC)
- If 10 or fewer samples are taken within a month, the single sample limit is 400 CFU (62-302.530(6), F.A.C.)

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Request Number: RQ-2008-05-05-48
Atlantic Dry Dock WWTF

Event ID *

Requester: Jennifer Paris
Field Report Prepared By: Bipin Adhyarn

Customer: NE-DIST
Collected By: Herndon Sims
Send Final Report To Tom Kallemeyn

Project ID: FYI3
Sampling Agency: F DEP (NED)

PMAS: 1143

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	Atlantic Dry Dock WWTF	☐ Comp ☒ Grab	Date 5/05/08 Time 1024 (Eastern) Central	Date Time Eastern Central	A
	Field ID: Effluent	Tot Res Chlorine (mg/L): Dech'd 0.43 / [redacted]	Diss Oxygen (mg/L): 8.67	Storet Station Number:	
	Matrix (Include type e.g. Salt, Fresh, etc): Salt	Temp (C): 24.54	pH: 6.80	Sample Depth ☐ m ☐ ft	☒ Salinity (PPTh) 2.52 ☒ Sp Conductance (umho/cm) 4720
	Latitude o ' " .	Longitude o ' " .	Comments	NPDES Number	

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	Atlantic Dry Dock WWTF	☐ Comp ☒ Grab	Date 5/05/08 Time 0850 (Eastern) Central	Date Time Eastern Central	B
	Field ID: Field Blank	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	
	Matrix (Include type e.g. Salt, Fresh, etc): Fresh	Temp (C)	pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) 0.0 ☒ Sp Conductance (umho/cm) <1
	Latitude o ' " .	Longitude o ' " .	Comments	NPDES Number	

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
		☐ Comp ☐ Grab	Date Time Eastern Central	Date Time Eastern Central	
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	
	Matrix (Include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)
	Latitude o ' " .	Longitude o ' " .	Comments	NPDES Number	

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
		☐ Comp ☐ Grab	Date Time Eastern Central	Date Time Eastern Central	
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	
	Matrix (Include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)
	Latitude o ' " .	Longitude o ' " .	Comments: 2 bioassay Rec'd 9:42 5.6.08 J.D. Tox.	NPDES Number	

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
Herndon Sims	5/5/08	DHL	[redacted]	5/6/08 0840				

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

FDEP Biology Laboratory - Acute Screen Bioassay Bench Sheets

Facility: Atlantic Dry Dock WWTF

Address: 8502 McKenna Drive

City: Jacksonville County: Duval Zip 32226

Contact/District: H. Sims / NE

NPDES Permit #: FL 0040592

LIMS Job #: TLH-2008-05-06-47 LIMS Sample #: 1100010

Lims Data Entry: MF 5-22-08 Data Entry Verification: BA 5-22-08

Sample Collection: Date: 5-12-08 (5 MF) Time: 1024

Hold Time Start: Date: 5-5-08 Time: 1024

Comments:
(A) Not needed, Saline test BA 5-13-08
Salinity of an aliquot of sample adjusted by the addition of artificial ocean salts per the AmericAnalysis bahia test. Salt control prepared by diluting ASW to a salinity of ~ 2.49 parts per thousand and salting with marsalt to approximate the test salinity - MF 5-6-08

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_03
Control survival ≥90%: (Yes) No
Temperature Range ≤3°C: (Yes) No

Test 2 validation: Test 2: SOP TA 07_04
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: 2.49 ppt Final Salinity: ~25 ppt 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:
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 25.8 max 26.4 mean 26.2
Incubator # ____ min ____ max ____ mean ____
Room B246 min 24.8 max 35.4 mean 25.2

Test 1:% mortality in 100% sample: 5 LC50: >100
Test 2:% mortality in 100% sample: 5 LC50: >100

Investigators' Signatures
James Denich
Bud Dietz
Marshall Faircloth

Dorothy 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: Salinity Adjusted Sample	Original Sample	Method	Measured by	Verified by
Field Total Residual Cl_2 (mg/L):	N/A	N/A	N/A	N/A	—	0.43	Hach	H. Sims	MF
Lab Total Residual Cl_2 (mg/L):			<0.03		0.04	0.04	HACH	JD	BA
Alkalinity (mg/L as $CaCO_3$):	89 (B)		231		123	104	HACH	BA	JD
Hardness (mg/L as $CaCO_3$):	97 (A)		—		—	—	HACH	—	—
Total Ammonia (mg/L as N):			<0.034		<0.017	<0.017	DENVER	MF	BA
Salinity (ppth):			~~<0.034~~ ~20 ppt BA		25	2.49	YSI / (Mettler)	JD	BA

V 1.4 9/12/05

Appendix B. (continued)

[redacted]

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1100010 Test #: 1/2 SOP#:TA 07-03 Test Started: Date 5-6-08 Time: 1215

Organism/Batch/Age: Americamysis bahia /5608/4 days Test Ended: Date 5-8-08 Time: 1300

Chamber/Test Volume: 1000 / 500 ml Diluent/ Batch: ASW / 4.21.08

Food/Batch: YCT____ P.sub____ Artemia 0hr 77-08 24hr 78-09 48hr ~~79-09~~ nt 72hr - Artemia Lot# 38138425 gR

Feeding: (Prior to Test) (~~Prior to Renewal~~) (Daily) nt - not applicable   Not applicable

Concentration	Replicate	Chamber #	Test Hour: 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
ctrl	A	H2	5	5	5			
	B	H2	5	5	5			
	C	H3	5	5	5			
	D	H4	5	5	5			
100%	A	H5	5	5	5			
	B	H6	5	5	4 1D			
	C	H7	5	5	5			
	D	H8	5	5	5			
Salt ctrl	A	H9	5	5	5			
	B	H10	5	5	5			
	C	H11	5	5	5			
	D	H12	5	5	5			
Loaded/Verified by: JD / MF		Checked by:	JD	JD	JD			

m = missing d = dead BR/AR = Before/After Renewal

Comments:

Test Results:

Screening Tests: Report LC50 as >100%, =100%, or <100%.

% mortality in 100% sample: 5% LC50: >100%

If Calculated: 95% CI________ Method__________

Substitue 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 #: 1100010 Test #: 2/2 SOP#:TA 07-04 Test Started: Date 5608 Time: 1225

Organism/Batch/Age: Menidia beryllina / 5608/13dys Test Ended: Date 5-8-08 Time: 1310

Chamber/Test Volume: 1000 / 500 ml Diluent/ Batch: ASW / 4.21.08

Food/Batch: YCT____ P.sub____ Artemia 0hr 77-08 24hr — 48hr ~~77-08~~ MF Not applicable 72hr — Artemia Lot# 384384125 GR

Feeding: (Prior to Test) (~~Prior to Renewal~~) (~~Daily~~) JD MF Not applicable

Concentration	Replicate	Chamber #	Test Hour: 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Ctrl	A	H13	5	5	5			
	B	H14	5	5	5			
	C	H15	5	5	5			
	D	H16	5	5	5			
100%	A	H17	5	5	5			
	B	H18	5	5	5			
	C	H19	5	4 1D	4			
	D	H20	5	5	5			
Loaded/Verified by: JD / MF		Checked by:	JD	JD	JD			

m = missing d = dead BR/AR = Before/After Renewal

Comments:

Test Results:

Screening Tests: Report LC50 as >100%, =100%, or <100%.

% mortality in 100% sample: 5% LC50: >100%

If Calculated: 95% CI________ Method________

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

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000003

FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 11 00010 **Test #:** 1st of 2

TEST SOP #: TA07_03 **Test Species:** *Ceriodaphnia dubia* *Cyprinella leedsi* *Pimephales promelas* (*Americamysis bahia*) *Menidia beryllina* Other:_____

Concentration: Ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	8.2	8.1	8.1			
Temperature °C	24.0	24.8	24.6			
Dissolved Oxygen mg/L	7.1	5.9	6.0			
Conductivity µmhos (mmhos)	12.0	12.9	12.4			
(initials) Measured by:	JD	JD	JD			
(initials) Recorded by:	JD	JD	JD			

Comments:

Concentration: 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	7.5	7.7	7.8			
Temperature °C	24.6	24.7	24.6			
Dissolved Oxygen mg/L	7.1	5.3	5.9			
Conductivity µmhos (mmhos)	12.3	12.7	12.5			
(initials) Measured by:	JD	JD	JD			
(initials) Recorded by:	JD	JD	JD			

Comments:

Concentration: 5.1% Ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	8.2	8.1	8.2			
Temperature °C	24.2	24.4	24.6			
Dissolved Oxygen mg/L	7.1	5.3	5.4			
Conductivity µmhos (mmhos)	12.3	12.4	12.5			
(initials) Measured by:	JD	JD	JD			
(initials) Recorded by:	JD	JD	JD			

Comments:

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

Comments:

FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 1100010 **Test #:** 1 of 2

TEST SOP #: TA07_04 **Test Species:** *Ceriodaphnia dubia* *Cyprinella leedsi* *Pimephales promelas* *Americamysis bahia* (*Menidia beryllina*) Other:_____

Concentration Ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	8.1	7.6	8.1			
Temperature °C	24.0	24.4	24.1			
Dissolved Oxygen mg/L	7.5	6.0	5.9			
Conductivity µmhos (mmhos)	4.66	5.33	5.26			
(initials) Measured by:	JD	JD	JD			
(initials) Recorded by:	JD	JD	JD			

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	7.2	8.2	7.8			
Temperature °C	24.5	24.4	24.2			
Dissolved Oxygen mg/L	7.5	6.4	6.1			
Conductivity µmhos (mmhos)	4.78	5.38	5.40			
(initials) Measured by:	JD	JD	JD			
(initials) Recorded by:	JD	JD	JD			

Comments:

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

Comments:

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

Comments:

000004

V 2.0 2/24/04

Appendix C. SRT Bench Sheets and Statistical Analysis

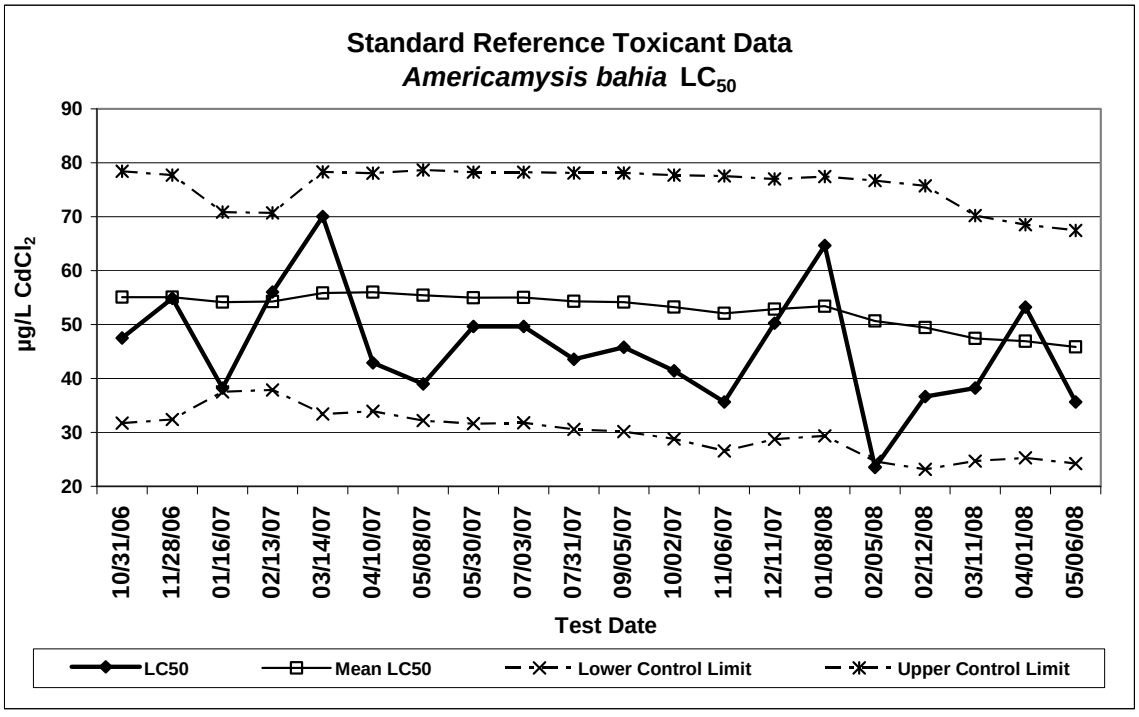
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 48-hour Acute Toxicity
Americamysis bahia (mysid shrimp) - Cadmium Chloride ($CdCl_2$)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
10/31/06	47.52	55.07	11.67	31.73	78.42
11/28/06	54.87	55.06	11.33	32.41	77.71
01/16/07	38.23	54.18	8.34	37.50	70.86
02/13/07	56.06	54.27	8.21	37.84	70.70
03/14/07	70.07	55.86	11.23	33.40	78.32
04/10/07	42.91	56.00	11.04	33.91	78.08
05/08/07	39.00	55.42	11.63	32.16	78.68
05/30/07	49.64	54.95	11.67	31.62	78.29
07/03/07	49.64	55.04	11.62	31.80	78.27
07/31/07	43.54	54.34	11.88	30.58	78.10
09/05/07	45.79	54.15	11.99	30.17	78.13
10/02/07	41.44	53.25	12.24	28.76	77.73
11/06/07	35.65	52.06	12.76	26.55	77.57
12/11/07	50.27	52.86	12.06	28.75	76.98
01/08/08	64.65	53.42	12.03	29.36	77.48
02/05/08	23.52	50.68	13.02	24.64	76.72
02/12/08	36.63	49.45	13.14	23.17	75.74
03/11/08	38.21	47.42	11.38	24.66	70.19
04/01/08	53.27	46.90	10.82	25.26	68.53
05/06/08	35.65	45.82	10.81	24.19	67.45

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

CV = 23.60
EPA reference 75th quartile CV = 26%



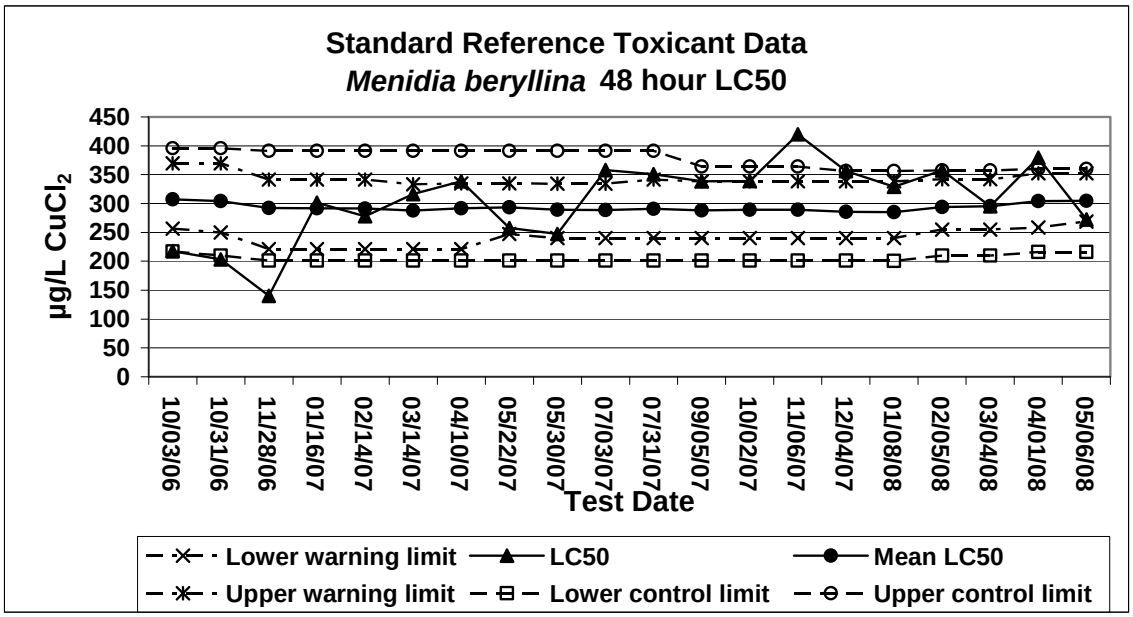
Appendix C. (continued)

Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - Acute Toxicity
Menidia beryllina (Inland silverside) - Copper Chloride ($CuCl_2$)

Date	LC50	Mean LC50	Lower control limit	Lower warning limit	Upper warning limit	Upper control limit
10/03/06	217.64	307.20	217.0	256.6	369.7	395.6
10/31/06	203.06	304.28	210.0	249.7	369.7	395.6
11/28/06	140.31	292.22	201.0	221.3	341.2	391.4
01/16/07	301.29	291.93	201.0	221.3	341.2	391.4
02/14/07	278.00	291.27	201.0	221.3	341.2	391.4
03/14/07	316.16	287.74	201.0	221.3	333.3	391.4
04/10/07	338.35	291.67	201.0	221.3	334.8	391.4
05/22/07	257.44	293.42	201.0	247.5	334.8	391.4
05/30/07	247.36	289.10	201.0	239.9	334.4	391.4
07/03/07	357.65	288.79	201.0	239.9	334.4	391.4
07/31/07	350.68	290.88	201.0	239.9	341.4	391.4
09/05/07	338.18	288.38	201.0	239.9	338.2	363.8
10/02/07	338.90	289.15	201.0	239.9	338.4	363.8
11/06/07	419.55	289.15	201.0	239.9	338.4	363.8
12/04/07	356.07	285.50	201.0	239.9	338.4	356.2
01/08/08	329.03	285.29	200.9	239.9	338.5	356.2
02/05/08	357.47	294.07	210.0	254.9	341.9	357.5
03/04/08	295.52	295.31	210.0	254.9	341.9	357.5
04/01/08	379.50	304.05	216.2	258.5	352.0	359.8
05/06/08	272.50	304.73	216.2	268.7	352.0	359.8

Means are of the last 20 SRT tests.
Upper warning and control limits are the 75th and 90th percentiles, respectively, of the past 20 LC50s.
Lower warning and control limits are the 25th and 10th percentiles, respectively, of the past 20 LC50s.
EPA reference 75th quartile CV = 21% **CV = 22.02**



Appendix C. (continued)

000009

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 (48 hour renewal)
Test Page 1 of 2

Diluent/ Batch #: ASW / 4.21.03
Toxicant/ Batch#: $CdCl_2$ / 5.5.03

Test Beginning: Date: 5.6.03 Time: 1300
Test Ending: Date: 5-10-03 Time: 1045

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	JD
Alkalinity (mg/L as $CaCO_3$):	234	Hach	BA
Hardness (mg.L as $CaCO_3$):	—	Hach	—
Total Ammonia (mg/L as N):	<0.034	Denver	MT
Salinity (ppth):	30	Mettler	JD

Organism Batch #/ Age: 5.6.03 / 1 to 2 hr
Feeding: (Prior to test) (Prior to renewal) (Daily)
Food: YCT — P.subcapitata — Artemia: Lot # 38438
Food Batch: — —
0hr 7.08 24hr 7.08 48hr 7.08 72hr 8.08
Chamber size: 350 mL
Test volume: 250 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	Tox 1	5	5	5	8.4			24.0			6.7			33.6		
	B	tox 2	5	5	5		8.1			24.2			4.6			34.1	
	C	tox 3	5	5	5			8.1			24.5			5.2			34.0
	D	tox 4	5	5	5												
20	A	tox 5	5	5	5	8.4			24.0			6.7			33.9		
	B	tox 6	5	5	5		8.2			24.3			4.7			34.4	
	C	tox 7	5	5	4/0			8.0			24.5			4.8			34.3
	D	tox 8	5	5	5												
30	A	tox 9	5	5	5	8.4			24.0			6.8			34.0		
	B	tox 10	5	5	4/0		8.1			24.4			4.6	.		34.6	
	C	tox 11	5	5	4/0			8.1			24.6			4.6			34.5
	D	tox 12	5	5	3/0												
45	A	tox 13	5	5	0/0	8.4			24.0			6.8			34.0		
	B	tox 14	5	5	0/0		8.2			24.5			4.7			34.6	
	C	tox 15	5	5	1/0			8.1			24.7			4.4			34.4
	D	tox 16	5	5	2/0												
67	A	tox 17	5	5	0/0	8.4			24.0			6.9			34.0		
	B	tox 18	5	4/0	0/0		8.2			24.4			5.0			33.4	
	C	tox 19	5	5	0/0			8.1			24.6			4.8			33.6
	D	tox 20	5	5	0/0												
100	A	tox 21	5	4/0	0/0	8.4			24.0			6.9			33.3		
	B	tox 22	5	3/0	0/0		8.2			24.3			5.0			34.2	
	C	tox 23	5	4/0	0/0			8.1			24.4			5.0			34.3
	D	tox 24	5	5	0/0												
	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 Daniels
Bruce Ahle
Marshall Faircloth
Loretta C. Wolfe
REVIEWER

Concentrations prepared by: JD
Loading verified by: BA
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min 25.8 max 26.6 mean 26.2
Incubator # ___ min. ___ max. ___ mean ___
Room B248 min. 24.8 max 25.6 mean 25.2

Comments:

Statistics: Method: Spearman-Karber
48/96 hour LC_{50}: 35.65
95% Confidence Interval: lower 32.02 upper 39.68

Appendix C. (continued)

000010

FDEP Biology Laboratory - Acute SRT Bench Sheet

[redacted]

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 #: ASW 1 4.21.08
Toxicant/ Batch#: CdCl2 1 5.5.08

Test Beginning: Date: 5.6.08 Time: 1300
Test Ending: Date: 5-10-08 Time: 1045

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	JD
Alkalinity (mg/L as $CaCO_3$):	234	Hach	BA
Hardness (mg.L as $CaCO_3$):	—	Hach	—
Total Ammonia (mg/L as N):	<0.039	Denver	MF
Salinity (ppth):	20	Mettler	JD

Organism Batch #/ Age: 5.6.08 / 5 day
Feeding: ~~Prior to test/ Prior to renewal~~ / (Daily)
Food: YCT — P.subcapitata — Artemia: Lot # 38438
Food Batch: — — 0hr 7.7-08 24hr 7.8-08 48hr 7.9-08 72hr 8.0-08
Chamber size: 350 mL
Test volume: 250 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	Tox 1	5	5	5			8.0			25.1			4.4			35.2
	B	tox 2	5	5	5												
	C	tox 3	5	5	5	8.3			24.2			6.4			33.5		
	D	tox 4	5	5	5		8.2			24.0			5.6			33.8	
20	A	tox 5	5	5	5			8.0			25.0			4.3			35.9
	B	tox 6	5	5	4 1D												
	C	tox 7	4	4	4	8.3			24.0			6.5			33.9		
	D	tox 8	5	5	4		8.2			24.0			7.6			35.0	
30	A	tox 9	5	2 3D	2			8.0			25.0			4.4			35.2
	B	tox 10	4	3 1D	3												
	C	tox 11	4	3 1D	3	8.3			24.0			6.5			34.1		
	D	tox 12	3	1 2D	0 1D		8.2			24.0			7.8			35.1	
45	A	tox 13	—	—	—												
	B	tox 14	—	—	—												
	C	tox 15	1	1	0 1D	8.4		8.1	24.0		25.3	6.6		4.4	33.9		34.8
	D	tox 16	2	0 2D	—		8.3			24.0			5.7			34.7	
67	A	tox 17	—	—	—												
	B	tox 18	—	—	—												
	C	tox 19	—	—	—	—		—	—		—	—		—	—		—
	D	tox 20	—	—	—		—			—			—			—	
100	A	tox 21	—	—	—												
	B	tox 22	—	—	—												
	C	tox 23	—	—	—	—		—	—		—	—		—	—		—
	D	tox 24	—	—	—		—			—			—			—	
	A																
	B																
	C																
	D																
Loaded / measured by:			JD	JD	MF	JD	JD	MF	JD	JD	MF	JD	JD	MF	JD	JD	MF
Recorded by:			JD	JD	MF	JD	JD	MF	JD	JD	MF	JD	JD	MF	JD	JD	MF

Investigators' Signatures
James Dignam
Carol Adams
Marshall Faircloth
Loretta C Wolfe
REVIEWER

Concentrations prepared by: JD
Loading verified by: JD
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min 25.8 max 26.6 mean 26.2
Incubator # ___ min ___ max ___ mean ___
Room B246 min 24.8 max 25.6 mean 25.2

Comments:

Statistics: Method: Spearman-Karber
48 / (96) hour LC_{50}: 27.55
95% Confidence Interval: lower 24.27 upper 31.28

Appendix C. (continued)

000007

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 #: ASW 1 4.21.08
Toxicant/ Batch#: $CuCl_2$ 1 5.5.08

Test Beginning: Date: 5.6.08 Time: 1305
Test Ending: Date: 5-10-08 Time: 1035

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	2.03	Hach	JD
Alkalinity (mg/L as $CaCO_3$):	234	Hach	DA
Hardness (mg.L as $CaCO_3$):	—	Hach	—
Total Ammonia (mg/L as N):	0.034	Denver	MF
Salinity (ppth):	20	Mettler	JD

Organism Batch #/ Age: 5.6.08/ 13days
Feeding: (Prior to test) (Prior to renewal) Daily
Food: YCT — *P.subcapitata* — Artemia: Lot # 38438
Food Batch: — — 0hr 7-08 24hr 9-08 48hr — 72hr —
48 hour mF
Chamber size: 1000 mL
Test volume: 500 mL per replicate

Conc. g/L µg/L mg/L	Rep.	Chamber #	Number Live 0 hr / 24 hr / 48 hr			pH (SU) 0 hr / 24 hr / 48 hr			Temperature (°C) 0 hr / 24 hr / 48 hr			D.O. (mg/L) 0 hr / 24 hr / 48 hr			Uncorrected Conductivity µmhos/cm (mmhos/cm) 0 hr / 24 hr / 48 hr		
			48 hr	72 hr	96 hr	48 hr	72 hr	96 hr	48 hr	72 hr	96 hr	48 hr	72 hr	96 hr	48 hr	72 hr	96 hr
Control	A	A13	10	10	10	8.4			24.0			6.7			34.0		
	B	A14	10	10	10		8.3			24.7			6.1			34.0	
	C							8.2			24.6			5.6			33.5
	D																
100	A	A15	10	10	10	8.4			24.0			6.8			34.0		
	B	A16	10	10	10		8.3			25.0			5.8			34.5	
	C							8.2			24.7			5.6			34.4
	D																
200	A	A17	10	9/0	9	8.4			24.0			6.9			34.0		
	B	A18	10	10	10		8.3			25.0			5.6			34.3	
	C							8.2			24.6			5.7			34.1
	D																
300	A	A19	10	3/0	3	8.4			24.0			6.9			34.0		
	B	A20	10	4/0	4		8.3			25.0			5.5			34.5	
	C							8.2			24.5			5.8			34.1
	D																
400	A	A21	10	0/00	—	8.4			24.0			7.0			33.3		
	B	A22	10	1/9	1		8.3			25.1			5.5			33.7	
	C							8.2			24.6			6.0			33.8
	D																
500	A	A23	10	0/0D	—	8.4			24.0			6.9			34.0		
	B	A24	10	0/0D	—		8.3			25.1			5.5			34.4	
	C																
	D																
	A																
	B																
	C																
	D																
Loaded / measured by:			MF	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 Daniels
Bruce Ford
Marshall Faircloth

Loretta C. Wolfe
REVIEWER

Concentrations prepared by: JD
Loading verified by: JD
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min. 25.8 max. 26.6 mean 26.2
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min. 24.8 max. 25.6 mean 25.2

Comments:

Statistics: Method: Spearman-Karber
48 / 96 hour LC_{50}: 172.5
95% Confidence Interval: lower 247.9 upper 299.55

Appendix C. (continued)

000008

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 #: ASW 1.21.08
Toxicant/ Batch#: $CuCl_2$ 1.5.08

Test Beginning: Date: 5.6.08 Time: 1305
Test Ending: Date: 5-10-08 Time: 1035

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	JD
Alkalinity (mg/L as $CaCO_3$):	234	Hach	DA
Hardness (mg.L as $CaCO_3$):	—	Hach	—
Total Ammonia (mg/L as N):	<0.034	Denver	MF
Salinity (ppth):	~20	Mettler	JD

Organism Batch #/ Age: 5608 / 13 hrs
Feeding: (Prior to test) (Prior to renewal) Daily
Food: YCT *P.subcapitata* Artemia: Lot # 38438
Food Batch: _____ _____ 0hr 2208 24hr — 48hr 2208 72hr ____
Chamber size: 1000 mL
Test volume: 500 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	A13	10	10	10	8.3		8.2	24.0		25.2	6.4		5.1	33.6		34.0
	B	A14	10	10	10		8.3			24.3			5.4			34.4	
	C																
	D																
100	A	A15	10	10	10	8.3		8.2	24.0		25.3	6.5		5.3	33.4		34.2
	B	A16	10	10	10		8.2			24.3			5.1			34.2	
	C																
	D																
200	A	A17	9	9	9	8.3		8.2	24.0		25.3	6.6		5.2	34.0		34.7
	B	A18	10	10	10		8.3			24.3			5.1			34.8	
	C																
	D																
300	A	A19	3	3	3	8.3		8.2	24.0		25.0	6.6		5.3	34.1		34.6
	B	A20	4	4	4		8.3			24.3			5.4			34.9	
	C																
	D																
400	A	A21	—	—		8.3			24.0			6.6			34.1		
	B	A22	1	1	1		8.3	8.2		24.2	25.0		5.4	5.4		34.3	34.2
	C																
	D																
500	A	A23	—	—	—	—		—	—		—	—		—	—		—
	B	A24	—	—	—		—			—			—			—	
	C																
	D																
	A																
	B																
	C																
	D																
Loaded / measured by:			JD/MF	JD	MF	JD	JD	MF	JD	JD	MF	JD	JD	MF	JD	JD	MF
Recorded by:			JD	JD	MF	JD	JD	MF	JD	JD	MF	JD	JD	MF	JD	JD	MF

Investigators' Signatures
James Flood
Marshall Faircloth
Loretta C. Ulrich
REVIEWER

Concentrations prepared by: JD
Loading verified by: JD
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min. 25.8 max. 26.6 mean 26.2
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min. 24.8 max. 25.6 mean 25.2

Comments:

Statistics: Method: Spearman-Karber
48 (96) hour LC_{50}: 272.50

Appendix C. (continued)

***Americamysis bahia* Acute Standard Reference Toxicant Test**

DATE: 5-6-08 DURATION: 48 hours TOXICANT : $CdCl_2$
SPECIES: *Americamysis bahia*

RAW DATA: Concentration (ug/L)	Number Exposed	Mortalities
.00	20	0
20.00	20	1
30.00	20	4
45.00	20	17
67.00	20	20
100.00	20	20

SPEARMAN-KARBER TRIM: 5.00%

SPEARMAN-KARBER ESTIMATES: LC50: **35.65**
95% LOWER CONFIDENCE: 32.02
95% UPPER CONFIDENCE: 39.68

***Menidia beryllina* Acute Standard Reference Toxicant Test**

DATE: 5-6-08 DURATION: 48 hours TOXICANT : $CuCl_2$
SPECIES: *Menidia beryllina*

RAW DATA: Concentration (ug/L)	Number Exposed	Mortalities
.00	20	0
100.00	20	0
200.00	20	1
300.00	20	13
400.00	20	19
500.00	20	20

SPEARMAN-KARBER TRIM: .00%

SPEARMAN-KARBER ESTIMATES: LC50: **272.50**
95% LOWER CONFIDENCE: 247.90
95% UPPER CONFIDENCE: 299.55

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: 5/5

Shipped to: FDEP

P.O. No: N/A

Species	Quantity	Age	Brood Number	Temperature	Salinity
Mysidopsis bahia	150	4 DAYS	MS080501	25°C	20‰
	50	3 DAYS	MS080502	25°C	10‰
Menidia beryllina	200	12 DAYS	SS080423	25°C	20‰
Cyprinella leedsi	150	10 DAYS	CL080425	25°C	
Pimephales promelas	150	8 DAYS	FM080427	25°C	

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Thank you for your order.

Appendix E. Chemical Analyses performed on the effluent from the Atlantic Dry Dock Wastewater Treatment Facility Outfall D-001, sampled on May 5, 2008.

Date Sampled	Field ID	Analyses	Component	Result	Remark	Units	MDL	PQL
5/5/2008 10:24	Effluent	AGP/LN	Algal Growth Potential	66.3	A	mg DryWt/L	3	3
5/5/2008 10:24	Effluent	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.55	U	ug/L	0.55	1.7
5/5/2008 10:24	Effluent	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.24	U	ug/L	0.24	0.71
5/5/2008 10:24	Effluent	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	4.4		mg/L	0.2	2
5/5/2008 10:24	Effluent	Overflow	Fecal Coliforms-Membrane Filter	6000	Z	#/100 mL	1	
5/5/2008 10:24	Effluent	Toxicology	Bioassay-Acute-Screen-SW-Mysid, LC50	100	L	LC50		
5/5/2008 10:24	Effluent	Toxicology	Bioassay-Acute-Screen-SW-Fish, LC50	100	L	LC50		
5/5/2008 10:24	Effluent	Metals	Arsenic	0.52	I	ug/L	0.5	2
5/5/2008 10:24	Effluent	Metals	Silver	0.025	U	ug/L	0.025	0.1
5/5/2008 10:24	Effluent	Metals	Lead	0.4	I	ug/L	0.2	0.8
5/5/2008 10:24	Effluent	Metals	Magnesium	103		mg/L	0.2	0.8
5/5/2008 10:24	Effluent	Metals	Nickel	40.1		ug/L	0.25	1
5/5/2008 10:24	Effluent	Metals	Aluminum	60	U	ug/L	60	240
5/5/2008 10:24	Effluent	Metals	Selenium	0.5	U	ug/L	0.5	2
5/5/2008 10:24	Effluent	Metals	Cadmium	0.14		ug/L	0.02	0.08
5/5/2008 10:24	Effluent	Metals	Iron	210		ug/L	30	120
5/5/2008 10:24	Effluent	Metals	Zinc	106		ug/L	5	20
5/5/2008 10:24	Effluent	Metals	Copper	90.6		ug/L	0.5	2
5/5/2008 10:24	Effluent	Metals	Chromium	1	U	ug/L	1	4
5/5/2008 10:24	Effluent	Metals	Calcium	78.6		mg/L	0.075	0.3
5/5/2008 10:24	Effluent	Nutrients	TSS	5	I	mg/L	4	16
5/5/2008 10:24	Effluent	Nutrients	Ammonia-N	0.076		mg N/L	0.01	0.02
5/5/2008 10:24	Effluent	Nutrients	O-Phosphate-P	7.6	A	mg P/L	0.2	0.5
5/5/2008 10:24	Effluent	Nutrients	NO2NO3-N	30		mg N/L	0.4	1
5/5/2008 10:24	Effluent	Nutrients	Total-P	8.3		mg P/L	0.2	0.6
5/5/2008 10:24	Effluent	Nutrients	Kjeldahl Nitrogen	1.4	J	mg N/L	0.16	0.4
5/5/2008 10:24	Effluent	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.8
5/5/2008 10:24	Effluent	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
5/5/2008 10:24	Effluent	Pesticides	Bromacil	0.2	U	ug/L	0.2	0.8
5/5/2008 10:24	Effluent	Pesticides	Naled	0.8	U	ug/L	0.8	3.2
5/5/2008 10:24	Effluent	Pesticides	Chlorpyrifos Methyl	0.1	U	ug/L	0.1	0.4
5/5/2008 10:24	Effluent	Pesticides	Atrazine	0.05	U	ug/L	0.05	0.2

Appendix E. (continued)

Date Sampled	Field ID	Analyses	Component	Result	Remark	Units	MDL	PQL
5/5/2008 10:24	Effluent	Pesticides	Diazinon	0.05	U	ug/L	0.05	0.2
5/5/2008 10:24	Effluent	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
5/5/2008 10:24	Effluent	Pesticides	Hexazinone	0.1	U	ug/L	0.1	0.4
5/5/2008 10:24	Effluent	Pesticides	Alachlor	0.6	U	ug/L	0.6	2.4
5/5/2008 10:24	Effluent	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2
5/5/2008 10:24	Effluent	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2
5/5/2008 10:24	Effluent	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
5/5/2008 10:24	Effluent	Pesticides	Parathion Methyl	0.1	U	ug/L	0.1	0.4
5/5/2008 10:24	Effluent	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6
5/5/2008 10:24	Effluent	Pesticides	Fonofos	0.1	U	ug/L	0.1	0.4
5/5/2008 10:24	Effluent	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
5/5/2008 10:24	Effluent	Pesticides	Metalaxyl	0.25	UJ	ug/L	0.25	1
5/5/2008 10:24	Effluent	Pesticides	Metribuzin	0.1	U	ug/L	0.1	0.4
5/5/2008 10:24	Effluent	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
5/5/2008 10:24	Effluent	Pesticides	Phorate	0.05	U	ug/L	0.05	0.2
5/5/2008 10:24	Effluent	Pesticides	Ethoprop	0.1	U	ug/L	0.1	0.4
5/5/2008 10:24	Effluent	Pesticides	Butylate	0.2	U	ug/L	0.2	0.8
5/5/2008 10:24	Effluent	Pesticides	Azinphos Methyl	0.2	U	ug/L	0.2	0.8
5/5/2008 10:24	Effluent	Pesticides	Metolachlor	0.5	U	ug/L	0.5	2
5/5/2008 10:24	Effluent	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	2-Chloronaphthalene	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	4,4'-DDD	1.4	U	ug/L	1.4	5.7
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Acenaphthene	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Benzo(b)fluoranthene	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	U	ug/L	1.9	7.6
5/5/2008 10:24	Effluent	Priority Organic Pollutants	beta-BHC	1.4	U	ug/L	1.4	5.7
5/5/2008 10:24	Effluent	Priority Organic Pollutants	2-Nitrophenol	0.95	UJ	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Benzo(a)pyrene	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Butyl benzyl phthalate	4.8	U	ug/L	4.8	19
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Hexachlorobutadiene	2.9	U	ug/L	2.9	11
5/5/2008 10:24	Effluent	Priority Organic Pollutants	delta-BHC	1.4	U	ug/L	1.4	5.7
5/5/2008 10:24	Effluent	Priority Organic Pollutants	gamma-BHC	1.4	U	ug/L	1.4	5.7
5/5/2008 10:24	Effluent	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.95	U	ug/L	0.95	3.8

Appendix E. (continued)

Date Sampled	Field ID	Analyses	Component	Result	Remark	Units	MDL	PQL
5/5/2008 10:24	Effluent	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9	U	ug/L	2.9	11
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Benzo(a)anthracene	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9	U	ug/L	2.9	11
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Di-n-octyl phthalate	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Endrin aldehyde	3.8	U	ug/L	3.8	15
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Phenanthrene	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Phenol	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	alpha-BHC	1.4	U	ug/L	1.4	5.7
5/5/2008 10:24	Effluent	Priority Organic Pollutants	4,4'-DDT	1.4	U	ug/L	1.4	5.7
5/5/2008 10:24	Effluent	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	U	ug/L	1.9	7.6
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Benzo(k)fluoranthene	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Dieldrin	1.4	U	ug/L	1.4	5.7
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Dimethyl phthalate	9.5	U	ug/L	9.5	38
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Hexachlorobenzene	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Hexachloroethane	2.9	U	ug/L	2.9	11
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Pyrene	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	2,4-Dinitrotoluene	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	2,6-Dinitrotoluene	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Aldrin	1.4	U	ug/L	1.4	5.7
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Diethyl phthalate	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Endosulfan I	3.8	U	ug/L	3.8	15
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Endosulfan II	3.8	U	ug/L	3.8	15
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Endosulfan sulfate	1.4	U	ug/L	1.4	5.7
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9	U	ug/L	2.9	11
5/5/2008 10:24	Effluent	Priority Organic Pollutants	4,4'-DDE	1.4	U	ug/L	1.4	5.7
5/5/2008 10:24	Effluent	Priority Organic Pollutants	4-Nitrophenol	14	U	ug/L	14	57
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Acenaphthylene	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Anthracene	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Di-n-butyl phthalate	4.8	U	ug/L	4.8	19
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Endrin	1.4	UJ	ug/L	1.4	5.7

Appendix E. (continued)

Date Sampled	Field ID	Analyses	Component	Result	Remark	Units	MDL	PQL
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Heptachlor epoxide	1.4	U	ug/L	1.4	5.7
5/5/2008 10:24	Effluent	Priority Organic Pollutants	2,4-Dichlorophenol	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	2,4-Dimethylphenol	9.5	U	ug/L	9.5	38
5/5/2008 10:24	Effluent	Priority Organic Pollutants	2,4-Dinitrophenol	14	U	ug/L	14	57
5/5/2008 10:24	Effluent	Priority Organic Pollutants	2-Chlorophenol	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38	U	ug/L	38	150
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Benzidine	95	U	ug/L	95	380
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Chrysene	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Fluorene	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Isophorone	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Naphthalene	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Pentachlorophenol	2.9	U	ug/L	2.9	11
5/5/2008 10:24	Effluent	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	14	U	ug/L	14	57
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Fluoranthene	0.95	U	ug/L	0.95	3.8
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Heptachlor	1.4	U	ug/L	1.4	5.7
5/5/2008 10:24	Effluent	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	U	ug/L	1.9	7.6
5/5/2008 10:24	Effluent	Priority Organic Pollutants	Nitrobenzene	1.9	U	ug/L	1.9	7.6
5/5/2008 10:24	Effluent	Field Parameter	Specific Conductance	4720		umhos/cm		
5/5/2008 10:24	Effluent	Field Parameter	Temperature	24.54		C		
5/5/2008 10:24	Effluent	Field Parameter	Dissolved Oxygen	8.67		mg/L		
5/5/2008 10:24	Effluent	Field Parameter	Total Residual Chlorine	0.43		mg/L		
5/5/2008 10:24	Effluent	Field Parameter	pH	6.8				
5/5/2008 8:50	Field Blank	Metals	Nickel	0.25	U	ug/L	0.25	1
5/5/2008 8:50	Field Blank	Metals	Lead	0.2	U	ug/L	0.2	0.8
5/5/2008 8:50	Field Blank	Metals	Iron	30	U	ug/L	30	120
5/5/2008 8:50	Field Blank	Metals	Aluminum	60	U	ug/L	60	240
5/5/2008 8:50	Field Blank	Metals	Zinc	5	U	ug/L	5	20
5/5/2008 8:50	Field Blank	Metals	Selenium	0.5	U	ug/L	0.5	2
5/5/2008 8:50	Field Blank	Metals	Cadmium	0.02	U	ug/L	0.02	0.08
5/5/2008 8:50	Field Blank	Metals	Copper	0.5	U	ug/L	0.5	2
5/5/2008 8:50	Field Blank	Metals	Magnesium	0.04	U	mg/L	0.04	0.16

Appendix E. (continued)

Date Sampled	Field ID	Analyses	Component	Result	Remark	Units	MDL	PQL
5/5/2008 8:50	Field Blank	Metals	Silver	0.025	U	ug/L	0.025	0.1
5/5/2008 8:50	Field Blank	Metals	Chromium	1	U	ug/L	1	4
5/5/2008 8:50	Field Blank	Metals	Arsenic	0.5	U	ug/L	0.5	2
5/5/2008 8:50	Field Blank	Metals	Calcium	0.075	U	mg/L	0.075	0.3
5/5/2008 8:50	Field Blank	Nutrients	TSS	4	U	mg/L	4	16
5/5/2008 8:50	Field Blank	Nutrients	Kjeldahl Nitrogen	0.08	U	mg N/L	0.08	0.2
5/5/2008 8:50	Field Blank	Nutrients	Total-P	0.02	U	mg P/L	0.02	0.06
5/5/2008 8:50	Field Blank	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
5/5/2008 8:50	Field Blank	Nutrients	NO2NO3-N	0.004	U	mg N/L	0.004	0.01
5/5/2008 8:50	Field Blank	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
5/5/2008 8:50	Field Blank	Pesticides	Diazinon	0.048	U	ug/L	0.048	0.19
5/5/2008 8:50	Field Blank	Pesticides	Parathion Methyl	0.095	U	ug/L	0.095	0.38
5/5/2008 8:50	Field Blank	Pesticides	Phorate	0.048	U	ug/L	0.048	0.19
5/5/2008 8:50	Field Blank	Pesticides	Chlorpyrifos Methyl	0.095	U	ug/L	0.095	0.38
5/5/2008 8:50	Field Blank	Pesticides	Ethoprop	0.095	U	ug/L	0.095	0.38
5/5/2008 8:50	Field Blank	Pesticides	Naled	0.76	U	ug/L	0.76	3
5/5/2008 8:50	Field Blank	Pesticides	Chlorpyrifos Ethyl	0.048	U	ug/L	0.048	0.19
5/5/2008 8:50	Field Blank	Pesticides	Azinphos Methyl	0.19	U	ug/L	0.19	0.76
5/5/2008 8:50	Field Blank	Pesticides	Alachlor	0.57	U	ug/L	0.57	2.3
5/5/2008 8:50	Field Blank	Pesticides	Parathion Ethyl	0.14	U	ug/L	0.14	0.56
5/5/2008 8:50	Field Blank	Pesticides	Norflurazon	0.14	U	ug/L	0.14	0.56
5/5/2008 8:50	Field Blank	Pesticides	Mevinphos	0.19	U	ug/L	0.19	0.76
5/5/2008 8:50	Field Blank	Pesticides	Ethion	0.048	U	ug/L	0.048	0.19
5/5/2008 8:50	Field Blank	Pesticides	Simazine	0.048	U	ug/L	0.048	0.19
5/5/2008 8:50	Field Blank	Pesticides	Prometryn	0.14	U	ug/L	0.14	0.56
5/5/2008 8:50	Field Blank	Pesticides	Metalaxyl	0.24	UJ	ug/L	0.24	0.96
5/5/2008 8:50	Field Blank	Pesticides	Fenamiphos	0.19	U	ug/L	0.19	0.76
5/5/2008 8:50	Field Blank	Pesticides	Atrazine	0.048	U	ug/L	0.048	0.19
5/5/2008 8:50	Field Blank	Pesticides	Malathion	0.14	U	ug/L	0.14	0.56
5/5/2008 8:50	Field Blank	Pesticides	Hexazinone	0.095	U	ug/L	0.095	0.38
5/5/2008 8:50	Field Blank	Pesticides	Metolachlor	0.48	U	ug/L	0.48	1.9
5/5/2008 8:50	Field Blank	Pesticides	Fonofos	0.095	U	ug/L	0.095	0.38
5/5/2008 8:50	Field Blank	Pesticides	Ametryn	0.048	U	ug/L	0.048	0.19
5/5/2008 8:50	Field Blank	Pesticides	Metribuzin	0.095	U	ug/L	0.095	0.38

Appendix E. (continued)

Date Sampled	Field ID	Analyses	Component	Result	Remark	Units	MDL	PQL
5/5/2008 8:50	Field Blank	Pesticides	Butylate	0.19	U	ug/L	0.19	0.76
5/5/2008 8:50	Field Blank	Pesticides	Bromacil	0.19	U	ug/L	0.19	0.76
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	2,4-Dimethylphenol	9.5	U	ug/L	9.5	38
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9	U	ug/L	2.9	11
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Endrin aldehyde	3.8	U	ug/L	3.8	15
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Pyrene	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	beta-BHC	1.4	U	ug/L	1.4	5.7
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	gamma-BHC	1.4	U	ug/L	1.4	5.7
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	4,4'-DDD	1.4	U	ug/L	1.4	5.7
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	U	ug/L	1.9	7.6
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	4-Nitrophenol	14	U	ug/L	14	57
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Acenaphthene	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Hexachlorobenzene	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Hexachlorobutadiene	2.9	U	ug/L	2.9	11
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Pentachlorophenol	2.9	U	ug/L	2.9	11
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	2-Chloronaphthalene	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38	U	ug/L	38	150
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	4,4'-DDE	1.4	U	ug/L	1.4	5.7
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9	U	ug/L	2.9	11
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Di-n-butyl phthalate	4.8	U	ug/L	4.8	19
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Di-n-octyl phthalate	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Isophorone	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	4,4'-DDT	1.4	U	ug/L	1.4	5.7
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	14	U	ug/L	14	57
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Diethyl phthalate	0.95	U	ug/L	0.95	3.8

Appendix E. (continued)

Date Sampled	Field ID	Analyses	Component	Result	Remark	Units	MDL	PQL
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	U	ug/L	1.9	7.6
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	2,4-Dinitrophenol	14	U	ug/L	14	57
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Benzidine	95	U	ug/L	95	380
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Endosulfan I	3.8	U	ug/L	3.8	15
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Endrin	1.4	UJ	ug/L	1.4	5.7
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Fluoranthene	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9	U	ug/L	2.9	11
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	alpha-BHC	1.4	U	ug/L	1.4	5.7
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	2,4-Dichlorophenol	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	2-Chlorophenol	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	2-Nitrophenol	0.95	UJ	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Chrysene	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Dieldrin	1.4	U	ug/L	1.4	5.7
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Fluorene	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	U	ug/L	1.9	7.6
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Naphthalene	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Phenol	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	delta-BHC	1.4	U	ug/L	1.4	5.7
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Aldrin	1.4	U	ug/L	1.4	5.7
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Anthracene	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Butyl benzyl phthalate	4.8	U	ug/L	4.8	19
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Dimethyl phthalate	9.5	U	ug/L	9.5	38
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Endosulfan II	3.8	U	ug/L	3.8	15
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Endosulfan sulfate	1.4	U	ug/L	1.4	5.7
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Heptachlor	1.4	U	ug/L	1.4	5.7
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Heptachlor epoxide	1.4	U	ug/L	1.4	5.7
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Phenanthrene	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Acenaphthylene	0.95	U	ug/L	0.95	3.8
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.95	U	ug/L	0.95	3.8

Appendix E. (continued)

Date Sampled	Field ID	Analyses	Component	Result	Remark	Units	MDL	PQL
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Hexachloroethane	2.9	U	ug/L	2.9	11
5/5/2008 8:50	Field Blank	Priority Organic Pollutants	Nitrobenzene	1.9	U	ug/L	1.9	7.6

Appendix F. Bioassay Instrument Identification

Test ID: Atlantic Dry Dock WWTF Test Dates: May 6-8, 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)

SRT - Check Organisms

Acute - _____A. bahia _____M. beryllina _____C. dubia _____C. leedsi _____P. promelas _____H. azteca

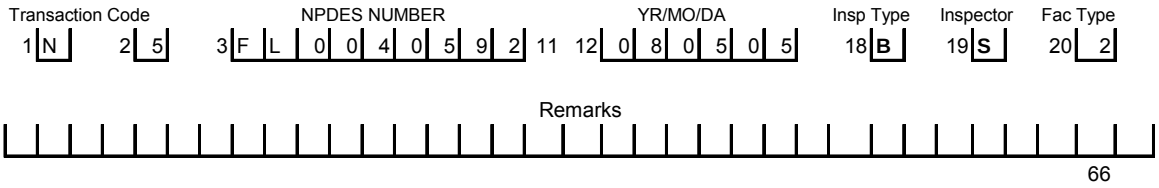
Chronic - ____ C. dubia ____P. promelas _____A. bahia _____M. beryllina ____P. subcapitata

Comments:

V 1.2 7/08/08 MF

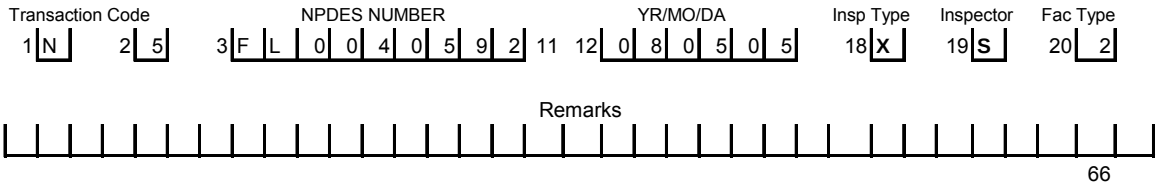
The Bioassay of the Atlantic Dry Dock Wastewater Treatment Facility effluent sampled on May 5, 2008. NPDES #FL0040592.

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



The Priority Pollutants Analysis of the Atlantic Dry Dock Wastewater Treatment Facility effluent sampled on May 5, 2008. NPDES #FL0040592.

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



Biological Analyses of the Atlantic Dry Dock Wastewater Treatment Facility effluent sampled on May 5, 2008. NPDES #FL0040592.

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

