

Effluent Quality Assessment

City of Monticello WWTP

Jefferson County

NPDES #FL0027839

Sampled January 28, January 30, and February 1, 2008

April 2008

Biology Section
Bureau of Laboratories
Division of Resource Assessment and Management

Quality Manual No. 870346G
NELAC Certification No. E31780

City of Monticello WWTP, Mamie Scott Drive, Monticello, Jefferson County, Florida, 32345. NPDES #FL0027839. Effluent samples for chemical, microbiological, algal growth potential and bioassay analyses for this facility were collected on January 28, 2008. Additional samples for bioassay analyses were collected on January 30 and February 1, 2008.

Introduction

The City of Monticello Wastewater Treatment Plant (WWTP) uses the activated sludge treatment process to treat domestic wastewater. The facility operates in the extended aeration mode. The wastewater treatment system and process consists of:

- pretreatment
- equalization
- nitrification
- secondary clarification
- disinfection
- dechlorination
- digestion
- recirculation
- storage pond (2.0 million gallon)
- sludge drying bed
- Constructed Wetlands
- Receiving Wetlands

Chlorine gas is used for disinfection. Sulfur dioxide is used for dechlorination. Dewatered residuals are disposed by land-spreading on the Earl Merritt Sod Farm.

The facility has a permitted discharge of 1.0 million gallons per day (MGD) monthly average daily flow (MADF). The MADF from January 2007 through December 2007 for Outfall D-001 (flow from WWTP to constructed wetlands) was 0.441 MGD, the flow for Outfall D-002 (flow from constructed wetland to receiving wetlands (Class III freshwaters)) was 0.142 MGD, and the flow for Outfall D-003 (flow from receiving wetlands to the Aucilla River) was 1.396 MGD. The Constructed Wetland consists of a 7.59 hectare (18.76 acres) aerobic wetland consisting of three cells and a 5.88 hectare (15.52 acres) anaerobic wetland consisting of 11 cells. The Receiving Wetland has an area of 101.17 hectares (250 acres). The Receiving Wetland discharges into another receiving wetland (Wolf Creek Swamp) consisting of approximately 485.62 hectares (1200 acres). The point of discharge from the Receiving Wetland to Wolf Creek Swamp is located approximately at latitude 30º 30’ 58” N, longitude 83º 50’ 43” W.

There is no Administrative Order for this facility. The facility has no mixing zones. Consent Order (OGC No. 07-0618-38-DW) was executed on June 20, 2007, for violations of permit limits for Total Suspended Solids (TSS), Carbonaceous Biological Oxygen Demand (CBOD), Fecal Coliform, and Dissolved Oxygen (DO). A review of Discharge Monitoring Report data for the past year revealed permit violations for fecal coliform (1/31/2007,value 493.2 #/100mL, limit ≤ 400 #/100mL), DO (1/31/2007 value 4.95 mg/L, 7/31/2007 value 3.68 mg/L, Limit ≥ 5 mg/L), TSS (1/31/2007 value 6.43 mg/L, 2/28/2007 value 6.427 mg/L, 3/31/2007 value 6.78 mg/L, 4/30/2007 value 6.68 mg/L, limit ≤ 5 mg/L), total phosphorus (3/31/2007, value 0.21 mg/L, 5/31/2007, value 0.21 mg/L, limit 0.2 mg/L), total unionized ammonia (5/31/2007, value 0.93 mg/L, limit 0.02 mg/L), total recoverable iron (9/30/2007, value 2.4 mg/L, limit 1 mg/L), and total recoverable nickel (9/30/2007, value 60.9 µg/L, limit 0 µg/L). The fecal coliform violation was the only violation from the WWTP (Outfall D-001); the remaining violations are from the constructed wetland. In 2007, in order to keep the constructed wetland alive, the majority of the water leaving the constructed wetland at D-002 was not discharged to the receiving wetland, but rather pumped back through the constructed wetland. (Facility information provided by Kim Allen of FDEP Northwest District.)

Methods

Samples were collected from the WER-01 NPDES sampling point for Outfall D-002 by Ken Espy and Todd Risk (FDEP Central Laboratory) 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 chronic screening toxicity tests and algal growth potential test were performed following internal DEP SOPs TA07_05, TA07_09, and TA08_01 through TA08_09. All internal DEP SOPs are available on the web at: http://www.floridadep.org/labs/cgi-bin/sop/biosop.asp.

Prior to test initiation and prior to daily renewal, bioassay samples were aerated for approximately 20 minutes at approximately 100 bubbles per minute, to decrease the dissolved oxygen concentrations which were above saturation (1st and 2nd sample 10 mg/L, 3rd sample 9.5 mg/L) to near saturation.

Dunnett's procedure (available at Statistical Analysis for Biological Methods http://www.epa.gov/EERD/stat2.htm) and t-tests were used to analyze data from these tests.

Toxicity Test Results

Tests were performed January 29 – February 5, 2008.

Ceriodaphnia dubia chronic screening bioassay – NOEC = 100% sample

Pimephales promelas chronic screening bioassay – NOEC < 100% sample

The bioassay samples were toxic to the *Pimephales promelas* test organisms, producing 57.5% mortality, but were not toxic to the *Ceriodaphnia dubia* test organisms, according to the permit conditions. The cause of toxicity was not determined. Approximately 83% (19 of 23 dead organisms) of the mortality in the *P. promelas* bioassay occurred with the second sample (collected on January 30, 2008). Samples for chemical analyses are not routinely collected with the second bioassay sample; therefore, it is unknown if priority pollutant (see Appendix E) chemical constituents contributed to the observed toxicity.

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

Algal Growth Potential

The effluent Algal Growth Potential (AGP) was 185 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 114.9 (±20%) mg dry wt/L (Table 1; Miller et al. 1978).

See Table 1 for AGP results.

Chemistry Results

Total residual chlorine (TRC) was reported by the facility on January 28, 2008, as 0.91 mg/L in the effluent after chlorination but prior to dechlorination. This was not a violation of the permit limit (≥ 0.5 mg/L) for disinfection. TRC and total ammonia were not detected in any of the three

bioassay samples (collected on January 28, January 30, and February 1, 2008, respectively) in the laboratory. The total ammonia concentration in the sample collected on January 28, 2008, and preserved for chemical analysis was 0.023 mg/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was < 0.02 mg/L.

Iron and zinc were detected in the effluent at levels that comply with Class III fresh water quality criteria (62-302.530, F.A.C.). Arsenic, copper, lead and nickel were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL).

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 WER-01 NPDES sampling point for Outfall D-002 for this facility on January 28, January 30 and February 1, 2008, was toxic to the *Pimephales promelas* test organisms during the 7-day chronic screening bioassays, but did not show toxicity to the *Ceriodaphnia dubia* test organisms. The cause of the observed toxicity was not determined. The effluent AGP result exceeded the "problem" threshold for fresh receiving waters. Effluent water quality samples did not exceed any applicable water quality standards or violate any permit conditions.

Literature Cited

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

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

Table 1. Measured and predicted algal growth potential (AGP; mg dry weight/L) for total soluble inorganic nitrogen (TSIN) and total nitrogen (TN) limitation of the freshwater species *Pseudokirchneriella subcapitata* and ratios of nitrogen to phosphorus for samples from the City of Monticello WWTP, collected on January 28, 2008.

City of Monticello WWTP					
Location	AGP (measured)	Predicted AGP (TSIN) ± 20%	Predicted AGP (TN) ± 20%	Inorganic N:P ratio	Total N:P ratio
Outfall D002	185.0	114.9 ± 23.0	129.6 ± 25.9	8.0	6.8

Table 2. Effluent limits, Class III Freshwater Criteria and chemical and microbiological data for samples from the City of Monticello WWTP, collected on January 28, January 30, and February 1, 2008.

City of Monticello WWTP NPDES# FL0027839	Class III Criteria	Effluent Limits Outfall D002	Outfall D002	Outfall D001	Effluent 1 30 08 Outfall D002	Effluent 2 1 08 Outfall D002
Organic Constituents (µg/L)						
None Detected	-	-	-	-	-	-
Metals (µg/L unless otherwise noted)						
Aluminum	-	-	60 U	-	-	-
Arsenic	≤ 50	-	0.89 I	-	-	-
Cadmium	≤ 0.31 b	-	0.02 U	-	-	-
Calcium (mg/L)	-	-	37.1 F	-	-	-
Chromium-III	≤ 99.37 b	-	1 U	-	-	-
Copper	≤ 10.82 b	≤ 10.82 bs	1.7 I	-	-	-
Iron	≤ 1,000	≤ 1,000 bs	720	-	-	-
Lead	≤ 3.97 b	≤ 3.97 bs	0.23 I	-	-	-
Magnesium (mg/L)	-	-	6.4 F	-	-	-
Nickel	≤ 60.43 b	≤ 60.43 bs	0.7 I	-	-	-
Selenium	≤ 5.0	-	0.5 U	-	-	-
Silver	≤ 0.07	≤ 0.07 s	0.025 U	-	-	-
Zinc	≤ 138.84 b	≤ 138.84 bs	46	-	-	-
Nutrients (mg/L)						
Ortho-phosphate	-	-	0.38	-	-	-
Total Phosphorus	-	2.0 sp	0.5	-	-	-
Total Ammonia	-	3.2 s	0.023	-	< 0.017 £U	< 0.017 £U
Un-ionized Ammonia	≤ 0.02 s	≤ 0.02 c	≤ 0.02 c	-	≤ 0.02 c	≤ 0.02 c
Nitrate and Nitrite	-	-	3	-	-	-
Total Kjeldahl Nitrogen	-	-	0.41	-	-	-
Organic Nitrogen	-	-	0.387 c	-	-	-
Total Nitrogen	-	6.0 sp	3.41 c	-	-	-
General Physical and Chemical Parameters						
Dissolved Oxygen (mg/L)	≥ 5.0 s	≥ 5.0 s	9.3	8.1	10.0 £	9.5 £
pH (SU)	6.0 - 8.5 s	Report	7.5	7.3	7.4 £	7.4 £
Conductivity (µmhos/cm)	≤ 1,275 s	≤ 1,275	416 £	-	399 £	408 £
Temperature °C	-	Report	14.5	14.5	14.9 £	12.7 £
Total Residual Chlorine (mg/L)	≤ 0.01 s	-	< 0.03 £	0.91	< 0.03 £	< 0.03 £
Chlorophyll a (µg/L)	-	-	1.4 I	-	-	-
Phaeophytin (µg/L)	-	-	0.75 I	-	-	-
Total Suspended Solids (mg/L)	-	10 sp	4 U	8 I	-	-
CBOD, 5 day (mg/L), N - inhibited	-	10 sp	0.47 I	1.7 I	-	-
Flow (MGD)	-	Report	0.142 m	0.441 m	-	-
Hardness (mg $CaCO_3$)	-	Report	118.99 c	-	131 £	131 £
Microbiology (Number of colony forming units/100ml)						
Fecal Coliforms	≤ 800	Report	64	140 B	-	-

Value exceeds the Class III Water Quality Criteria or permit limits

b - Value is calculated based on hardness
c - Value is calculated
m - monthly average
p - Limit based on 8-hour flow proportioned composite sample
s - Single sample
B - Results based on colony counts outside the acceptance range
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
U - Material analyzed for but not detected; value reported is the method detection limit
£ - Measurement performed in the FDEP bioassay laboratory

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2008-01-28-14
City of Monticello

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

Requester: Jennifer Paris
Field Report Prepared By:
Collected By: Ken Espy, Todd Risk
Send Final Report To Gary Hardie
Sampling Agency: FDEP/LAB/Biology - NW District

Lab ID *	Location / Field ID / Matrix / Temp (C) / pH / Latitude / Longitude	Comp / Grab / Collection (begin) Eastern Central / Collection (end) Eastern Central / Tot Res Chlorine (mg/L) / Diss Oxygen (mg/L) / Storet Station Number / Sample Depth m ft / Salinity (PPTh) / Sp Conductance (umho/cm) / NPDES Number / Comments	Bottle Group(s)**
	Location: City of Monticello WWTP Field ID: D001 Matrix: Fresh Temp (C): 14.5 pH: 7.27 Latitude: 30° 33' 17.3" Longitude: 83° 51' 39.0"	☐ Comp ☒ Grab Collection (begin) Date 1/28/08 Time 12:10 Central Collection (end) Tot Res Chlorine (mg/L): 0.91 Diss Oxygen (mg/L): 8.12 Sample Depth ☐ m ☐ ft ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm) NPDES Number Comments	C
	Location: City of Monticello WWTP Field ID: D002 Matrix: Fresh Temp (C): 14.5 pH: 7.45 Latitude: 30° 33' 41.7" Longitude: 83° 51' 25.1"	☐ Comp ☒ Grab Collection (begin) Date 1/28/08 Time 13:22 Central Collection (end) Tot Res Chlorine (mg/L) Diss Oxygen (mg/L): 9.31 Sample Depth ☐ m ☐ ft ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm) NPDES Number Comments	A
	Location: City of Monticello WWTP Field ID: D002 Matrix: Fresh Temp (C): pH: Latitude: 30° 33' 41.7" Longitude: 83° 51' 25.1"	☒ Comp ☐ Grab Collection (begin) Date 1/27/08 Time 11:00 Central Collection (end) Date 1/28/08 Time 8:30 Central Tot Res Chlorine (mg/L) Diss Oxygen (mg/L) Sample Depth ☐ m ☐ ft ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm) NPDES Number Comments: Toxicity Test	A
	Location: City of Monticello WWTP Field ID: Field Blank Matrix: Fresh Temp (C): pH: Latitude: Longitude:	☐ Comp ☒ Grab Collection (begin) Date 1/28/08 Time 12:00 Central Collection (end) Tot Res Chlorine (mg/L) Diss Oxygen (mg/L) Sample Depth ☐ m ☐ ft ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm) NPDES Number Comments: This is a field blank not an equipment blank! Ken E.	B

Relinquished By:	Date/Time	Shipping Method:	Received By:
K. Espy	1/28/08 16:05		L. White

Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
1/28/08/1600				

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2008-01-28-14
City of Monticello

Requester: Jennifer Paris
Field Report Prepared By:

Customer: NW-DIST
Collected By: Liz Miller
Send Final Report To Gary Hardie

Project ID: FYI3
Sampling Agency: FDEP Tallahassee

PMAS: 1143

Lab ID *	Location			☒ Comp ☐ Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	Monticello WWTP				1/29/08 8:30	1/30/08 08:40	A
	Field ID: Effluent			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	
	Matrix (Include type e.g. Salt, Fresh, etc	Temp (C)	pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number	
	Latitude o ' "	Longitude o ' "		Comments			

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

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

Lab ID *	Location			☐ Comp ☐ Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	
	Matrix (Include type e.g. Salt, Fresh, etc	Temp (C)	pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number	
	Latitude o ' "	Longitude o ' "		Comments 2 Bessey tubes in box 1335 1/30/09 JD.			

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
Liz Miller	1/30/08 9:41	Hand Delivered	Johnson	01/30/09 9:41				

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

Florida Department of Environmental Protection

Event ID *

Central Laboratory Sample Submittal Form

Request Number: RQ-2008-01-28-14
City of Monticello

Requester: Jennifer Paris
Field Report Prepared By: Liz Miller

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

Collected By: Liz Miller
Send Final Report To Gary Hardie
Sampling Agency: Central Biology FDEP

Lab ID *	Location	Monticello WWTP	X Comp / Grab	Collection (begin) Date 8-3 1/31/08	Time 8:30	Eastern Central	Collection (end) Date 2/1/08	Time 8:40	Eastern Central	Bottle Group(s)**
	Field ID	Effluent	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)			Storet Station Number			
	Matrix (Include type e.g. Salt, Fresh, etc) Effluent	Temp (C)	pH	Sample Depth m / ft			Salinity (PPTh) / Sp Conductance (umho/cm)		NPDES Number	A
	Latitude o ' "	Longitude o ' "	Comments							
Lab ID *	Location		Comp / Grab	Collection (begin) Date	Time	Eastern Central	Collection (end) Date	Time	Eastern Central	Bottle Group(s)**
	Field ID		Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)			Storet Station Number			
	Matrix (Include type e.g. Salt, Fresh, etc	Temp (C)	pH	Sample Depth m / ft			Salinity (PPTh) / Sp Conductance (umho/cm)		NPDES Number	
	Latitude o ' "	Longitude o ' "	Comments							
Lab ID *	Location		Comp / Grab	Collection (begin) Date	Time	Eastern Central	Collection (end) Date	Time	Eastern Central	Bottle Group(s)**
	Field ID		Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)			Storet Station Number			
	Matrix (Include type e.g. Salt, Fresh, etc	Temp (C)	pH	Sample Depth m / ft			Salinity (PPTh) / Sp Conductance (umho/cm)		NPDES Number	
	Latitude o ' "	Longitude o ' "	Comments							
Lab ID *	Location		Comp / Grab	Collection (begin) Date	Time	Eastern Central	Collection (end) Date	Time	Eastern Central	Bottle Group(s)**
	Field ID		Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)			Storet Station Number			
	Matrix (Include type e.g. Salt, Fresh, etc	Temp (C)	pH	Sample Depth m / ft			Salinity (PPTh) / Sp Conductance (umho/cm)		NPDES Number	
	Latitude o ' "	Longitude o ' "	Comments							

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
Liz Miller	2/1/08 9:32	HAND	Frank Rush	2-1-08 9:34				

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

Appendix B. Bench Sheets

FDEP Biology Laboratory - Chronic Screen Bench Sheet

Ceriodaphnia dubia

1-29-08 City of Monticello WWTP

Facility: BA ~~GRU Main Street~~

Address: Mamie Scott Drive

County: Monticello, Jefferson County, Florida

NPDES Permit #: FL 0027839

Contact/District: Kim Allen / Northwest

LIMS entry: 2-4-08 MF verified: MF 2-4-08

Diluent/ Batch: 20% DMW / 1-24-08 Test Days Used: 0 – 2

20% DMW / 1-31-08 Test Days Used: ~~3 – 5~~ 3 – 5

SOP#: TA07_05 EPA 821-R-02-013 Method 1002.0

Start Date: 1-29-08 Time: 1305

End Date: 2-4-08 Time: 1345

Organism: *Ceriodaphnia dubia*

Organism Batch #: 4-08

Organism age : <24 hours

Feeding: Prior to Test and Daily

Food: (YCT) (*P. subcapitata*)

Food Batch: 7-26-07 7-26-07

Chamber size : 30 ml

Sample volume : 20 ml

Sample Received	Lab Sample #	LIMS Job #	LIMS Sample #	Collection Date/Time	Received Date/Time
Test Day 0	1	TLH-2008-01-28-05	1078679	1-28-08 0830	1-29-08 0825
Test Day 2	2	TLH-2008-01-30-43	1079116	1-30-08 0830	1-30-08 1335
Test Day 4	3	TLH-2008-02-01-01	1079515	02-01-08 0840	2-1-08 1017

Water Quality Parameters	Field Chlorine (mg/L)			Lab Chlorine (mg/L)			Alkalinity (mg/L as $CaCO_3$)		
Lab Sample #:	1	2	3	1	2	3	1	2	3
Sample:	0,91	Not Measured	Not Measured	<0.03	<0.03	<0.03	80 (A)	80 (A)	82 (A)
Diluent/Control:				<0.03	<0.03	<0.03	107	115	113
Method:	Fair Field Water	—	—	Hach	Hach	Hach	Hach	Hach	Hach
Measured by:	Operator	—	—	DO	MF	MF	BA	BA	BA
Verified by:	MF	MF	MF	MF	BA	BA	MF	MF	MF
	Conductivity (circle one) (µmhos-cm) (mmhos-cm)			Ammonia (mg/L)			Hardness (mg/L as $CaCO_3$)		
Lab Sample #:	1	2	3	1	2	3	1	2	3
Sample:	416	399	408	<0.017	<0.017	<0.017	95 (A)	95 (A)	95 (A)
Diluent/Control:	188	188	176	<0.017	<0.017	<0.017	132	131	131
Method:	Mettler	Mettler	Mettler	Denver	Denver	Denver	Hach	Hach	Hach
Measured by:	MF	MF	MF	MF	MF	MF	BA	BA	BA
Verified by:	BA	BA	BA	BA	BA	MF	MF	MF	MF

Alkalinity Control MF — 100% sample MF alkalinity

Control hardness — Sample (100% effluent) hardness

Temperature Shipped ≤6° C (all samples) (yes) no

Holding Time ≤36 hours (yes) no

Light Intensity : 50 - 100 ft. candles

Photoperiod : 16 light 8 dark

Temperature Range °C:

Incubator # 2 min. 25.5 max. 26.5 mean 26.0

Room B246 min. 23.2 max. 24.8 mean 24.0

Test Replicate	Loaded from culture vial
1	B20
2	A6
3	B8
4	A11
5	B16
6	A26
7	B3
8	A24
9	B14
10	B5

Statistics	
Control % CV:	10.5
Dunnetts PMSD:	9.3
Reproduction NOEC:	100%
Survival NOEC:	100%
Reproduct T-test value	0,69035
Reproduct T- table value:	1,734
df:	18

Investigators' signatures

Brian Adams

Marshall Faircloth

James Banks

Anita C Wolfe

REVIEWER

Comments: (A) control / sample parameters swapped BA 1-31-08 all samples aerated to Reduce DO from ≥10.0 mg/L to near Saturation aeration for ≈ 20 minutes, at 100 bubbles/min, MF 2-5-08

Test Page 1 of 3

PAGE 000019

revised 08/24/06 MF/SP

FDEP Biology Laboratory - Chronic Screen Bench Sheet

Ceriodaphnia dubia Survival and Reproduction

Facility: Monticello WWTP

LIMS Sample # 1078679 for lab sample 1

Start Date: 1-29-08 Time: 13:05

End Date: 2-4-08 Time: 13:45

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total Neonates	Surviving adults	Neonates per adult
Control	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	4	4	5	4	0	5	0	5	0	0	27	10	2.7
	4	0	0	15	14	4	0	6	0	6	6	24	10	2.4
	5	10	10	11	12	12	8	12	10	12	13	110	10	11.0
	6	12	13	15	12	11	15	14	13	13	17	135	10	13.5
	7													
	8													
	Total	26	27	32	29	27	28	32	28	31	36	296	10	29.6

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total Neonates	Surviving adults	Neonates per adult
% sample	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	6	5	5	5	0	6	0	0	0	0	27	10	2.7
	4	0	0	0	0	6	0	6	3	6	7	28	10	2.8
	5	15	11	11	10	11	11	13	7	12	12	113	10	11.3
	6	14	15	13	16	12	17	15	11	13	13	139	10	13.9
	7													
	8													
	Total	35	31	29	31	29	34	34	21	31	32	307	10	30.7

Organisms loaded by: BA	
Day	Counted/ verified by:
0	MF
1	MF
2	BA
3	MF
4	MF
5	BA
6	MF
7	—
8	—

Concentration	Mean neonates /adult	% survival
Control	29.6	100
100%	30.7	100

Test acceptability	
Mean control reproduction 15/female	(yes) no
3rd brood in 60% of surviving females	(yes) no
Control survival ≥80%:	(yes) no

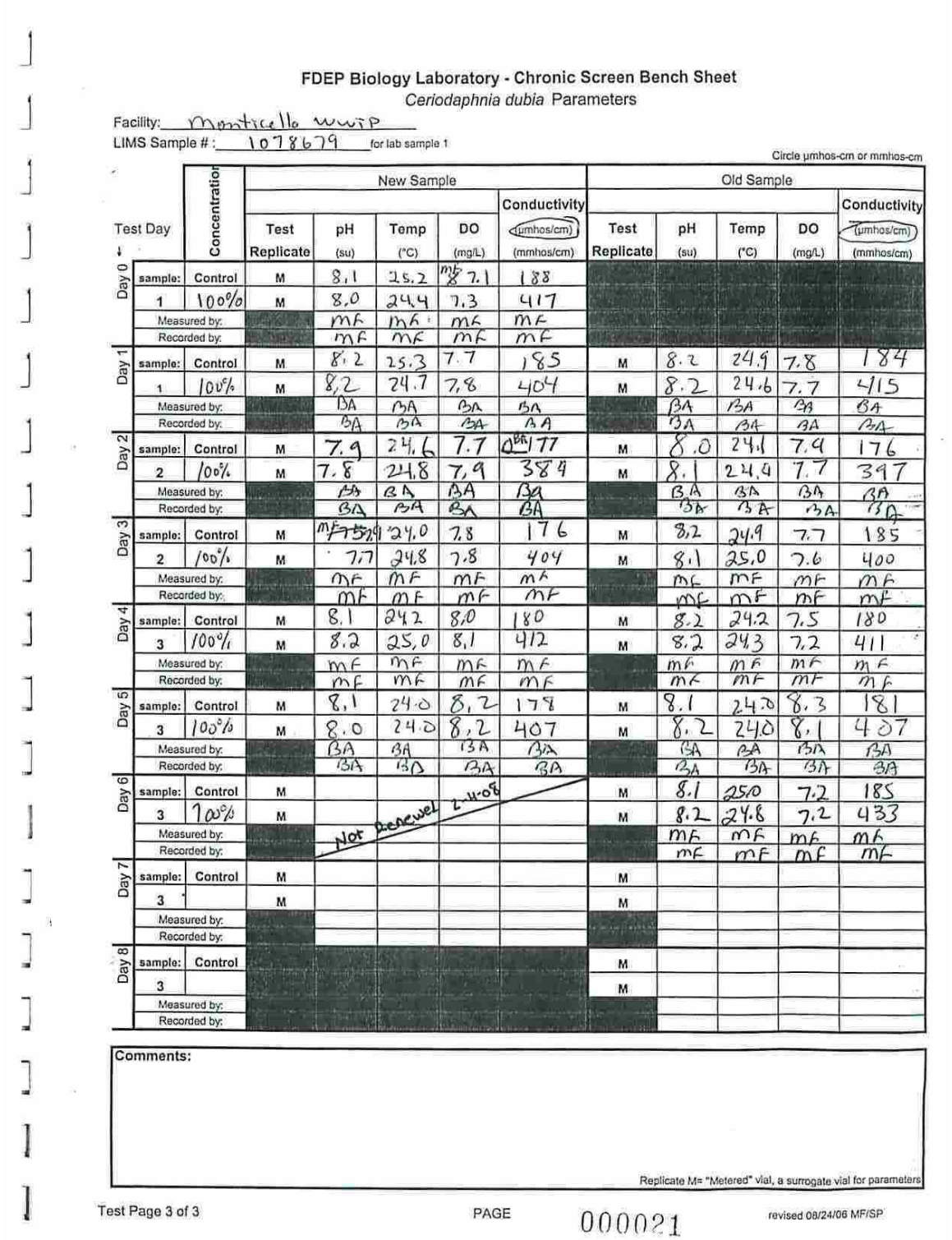
Comments: (S) = split brood on 2-2-08

*Day 0 is test initiation day

X = Dead (original organism)

020000

Appendix B. (continued)



FDEP Biology Laboratory - Chronic Screen Bench Sheet

Ceriodaphnia dubia Parameters

Facility: Monticello WWTP

LIMS Sample #: 1078679 for lab sample 1

Circle µmhos-cm or mmhos-cm

Test Day ↓		Concentration	New Sample: Test Replicate	pH (su)	Temp (°C)	DO (mg/L)	Conductivity (µmhos/cm) (mmhos/cm)	Old Sample: Test Replicate	pH (su)	Temp (°C)	DO (mg/L)	Conductivity (µmhos/cm) (mmhos/cm)
Day 0	sample:	Control	M	8.1	25.2	MF 7.1	188					
	1	100%	M	8.0	24.4	7.3	417					
	Measured by:			MF	MF	MF	MF					
	Recorded by:			MF	MF	MF	MF					
Day 1	sample:	Control	M	8.2	25.3	7.7	185	M	8.2	24.9	7.8	184
	1	100%	M	8.2	24.7	7.8	404	M	8.2	24.6	7.7	415
	Measured by:			BA	BA	BA	BA		BA	BA	BA	BA
	Recorded by:			BA	BA	BA	BA		BA	BA	BA	BA
Day 2	sample:	Control	M	7.9	24.6	7.7	BA 177	M	8.0	24.1	7.9	176
	2	100%	M	7.8	24.8	7.9	384	M	8.1	24.4	7.7	397
	Measured by:			BA	BA	BA	BA		BA	BA	BA	BA
	Recorded by:			BA	BA	BA	BA		BA	BA	BA	BA
Day 3	sample:	Control	M	MF 7.9	24.0	7.8	176	M	8.2	24.9	7.7	185
	2	100%	M	7.7	24.8	7.8	404	M	8.1	25.0	7.6	400
	Measured by:			MF	MF	MF	MF		MF	MF	MF	MF
	Recorded by:			MF	MF	MF	MF		MF	MF	MF	MF
Day 4	sample:	Control	M	8.1	24.2	8.0	180	M	8.2	24.2	7.5	180
	3	100%	M	8.2	25.0	8.1	412	M	8.2	24.3	7.2	411
	Measured by:			MF	MF	MF	MF		MF	MF	MF	MF
	Recorded by:			MF	MF	MF	MF		MF	MF	MF	MF
Day 5	sample:	Control	M	8.1	24.0	8.2	178	M	8.1	24.0	8.3	181
	3	100%	M	8.0	24.0	8.2	407	M	8.2	24.0	8.1	407
	Measured by:			BA	BA	BA	BA		BA	BA	BA	BA
	Recorded by:			BA	BA	BA	BA		BA	BA	BA	BA
Day 6	sample:	Control	M			2-11-08		M	8.1	25.0	7.2	185
	3	100%	M		Not Received			M	8.2	24.8	7.2	433
	Measured by:								MF	MF	MF	MF
	Recorded by:								MF	MF	MF	MF
Day 7	sample:	Control	M					M				
	3		M					M				
	Measured by:											
	Recorded by:											
Day 8	sample:	Control						M				
	3							M				
	Measured by:											
	Recorded by:											

Comments:

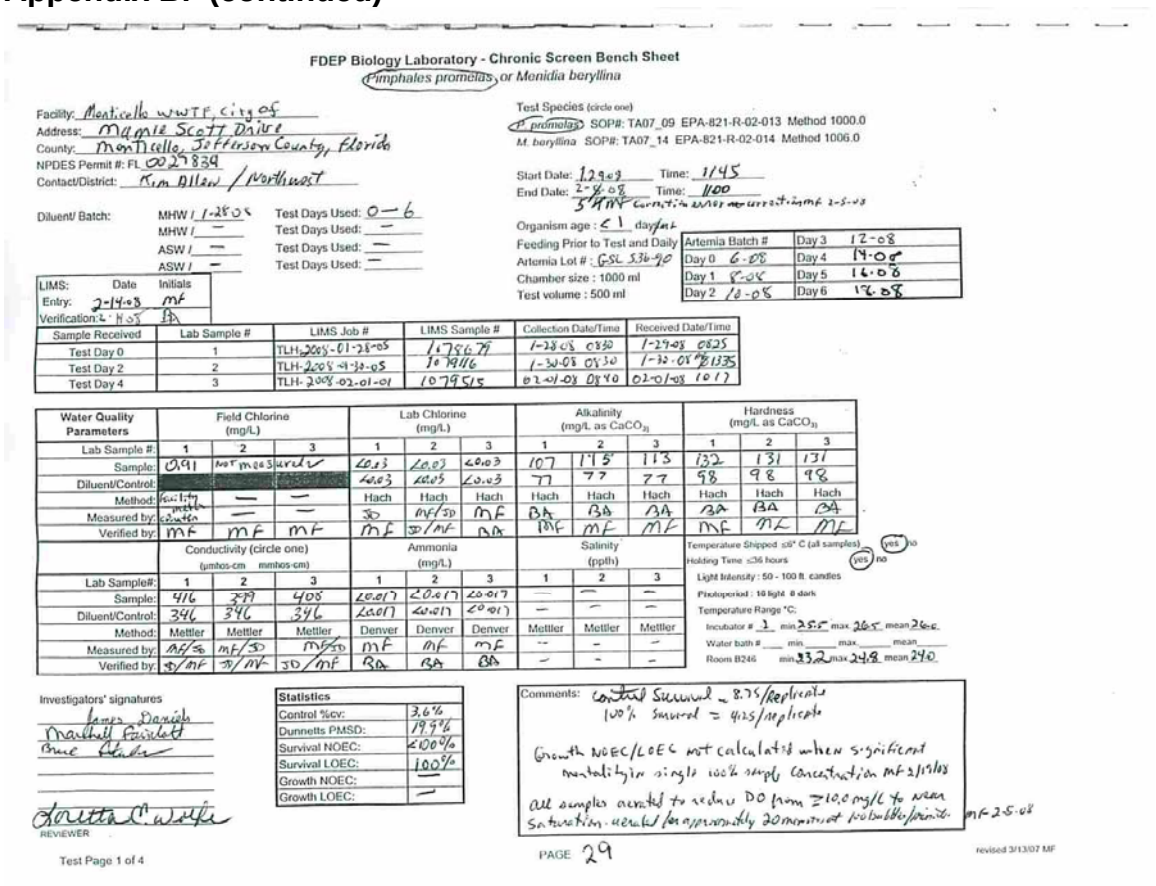
Replicate M= "Metered" vial, a surrogate vial for parameters

Test Page 3 of 3

PAGE 000021

revised 08/24/06 MF/SP

Appendix B. (continued)



FDEP Biology Laboratory - Chronic Screen Bench Sheet

Pimphales promelas, or *Menidia beryllina*

Facility: Monticello WWTF, City of
Address: Maggie Scott Drive
County: Monticello, Jefferson County, Florida
NPDES Permit #: FL 0027839
Contact/District: Kim Allen / Northwest

Test Species (circle one)
(*P. promelas*) SOP#: TA07_09 EPA-821-R-02-013 Method 1000.0
M. beryllina SOP#: TA07_14 EPA-821-R-02-014 Method 1006.0

Start Date: 1-29-08 Time: 1145
End Date: 2-5-08 Time: 1100
5 day NMF Correction under no correctionsmf 2-5-08

Diluent/ Batch: MHW / 1-28-08 Test Days Used: 0—6
MHW / — Test Days Used: —
ASW / — Test Days Used: —
ASW / — Test Days Used: —

Organism age : < 1 day *mf*
Feeding Prior to Test and Daily
Artemia Lot # : GSL 536-90
Chamber size : 1000 ml
Test volume : 500 ml

Artemia Batch #		Day 3	12-08
Day 0	6-08	Day 4	14-08
Day 1	8-08	Day 5	16-08
Day 2	10-08	Day 6	17-08

LIMS:	Date	Initials
Entry:	2-14-08	mf
Verification:	2-14-08	BA

Sample Received	Lab Sample #	LIMS Job #	LIMS Sample #	Collection Date/Time	Received Date/Time
Test Day 0	1	TLH-2008-01-28-05	1078679	1-28-08 0830	1-29-08 0825
Test Day 2	2	TLH-2008-01-30-05	1079116	1-30-08 0830	1-30-08 1335
Test Day 4	3	TLH-2008-02-01-01	1079515	02-01-08 0840	02-01-08 1017

Water Quality Parameters	Field Chlorine (mg/L)			Lab Chlorine (mg/L)			Alkalinity (mg/L as $CaCO_3$)			Hardness (mg/L as $CaCO_3$)		
Lab Sample #:	1	2	3	1	2	3	1	2	3	1	2	3
Sample:	0.91	not measured		<0.03	<0.03	<0.03	107	115	115	132	131	131
Diluent/Control:				<0.03	<0.03	<0.03	77	77	77	98	98	98
Method:	Kelly Hatch	—	—	Hach	Hach	Hach	Hach	Hach	Hach	Hach	Hach	Hach
Measured by:	Kelly Hatch	—	—	SD	MF/SD	MF	BA	BA	BA	BA	BA	BA
Verified by:	MF	MF	MF	MF	SD/MF	BA	MF	MF	MF	MF	ML	MF

	Conductivity (circle one) (µmhos-cm mmhos-cm)			Ammonia (mg/L)			Salinity (ppth)		
Lab Sample#:	1	2	3	1	2	3	1	2	3
Sample:	416	379	408	<0.017	<0.017	<0.017	—	—	—
Diluent/Control:	346	346	346	<0.017	<0.017	<0.017	—	—	—
Method:	Mettler	Mettler	Mettler	Denver	Denver	Denver	Mettler	Mettler	Mettler
Measured by:	MF/SD	MF/SD	MF/SD	MF	MF	MF	--	-	-
Verified by:	SD/MF	SD/MF	SD/MF	BA	BA	BA	-	-	-

Temperature Shipped ≤6° C (all samples) (yes) no
Holding Time ≤36 hours (yes) no
Light Intensity : 50 - 100 ft. candles
Photoperiod : 16 light 8 dark
Temperature Range °C:
Incubator # 1 min 25.5 max 26.5 mean 26.0
Water bath # ___ min ___ max ___ mean ___
Room B246 min 23.2 max 24.8 mean 24.0

Investigators' signatures
James Daniels
Marshall Faircloth
Bruce Stubbs

REVIEWER

Statistics	
Control %cv:	3.6%
Dunnetts PMSD:	19.9%
Survival NOEC:	<100%
Survival LOEC:	100%
Growth NOEC:	—
Growth LOEC:	—

Comments: Control Survival = 8.75/replicate
100% survival = 4.25/replicate
Growth NOEC/LOEC not calculated when significant mortality in single 100% sample concentration mf 2/15/08
All samples aerated to restore DO from ≥10.0 mg/L to near saturation. Aerated for approximately 20 minutes at moderate bubble/pump rate. mf 2-5-08

Test Page 1 of 4

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revised 3/13/07 MF

Appendix B. (continued)

FDEP Biology Laboratory - Chronic Screen Bench Sheet

Pimphales promelas or Menidia beryllina Survival

Facility: City of Monticello WWTP

Organism: (*P. promelas*) *M.beryllina* (circle one)

LIMS Sample Number: 1078679 for lab sample #1

Start Date: 1.29.09 Time: 1145

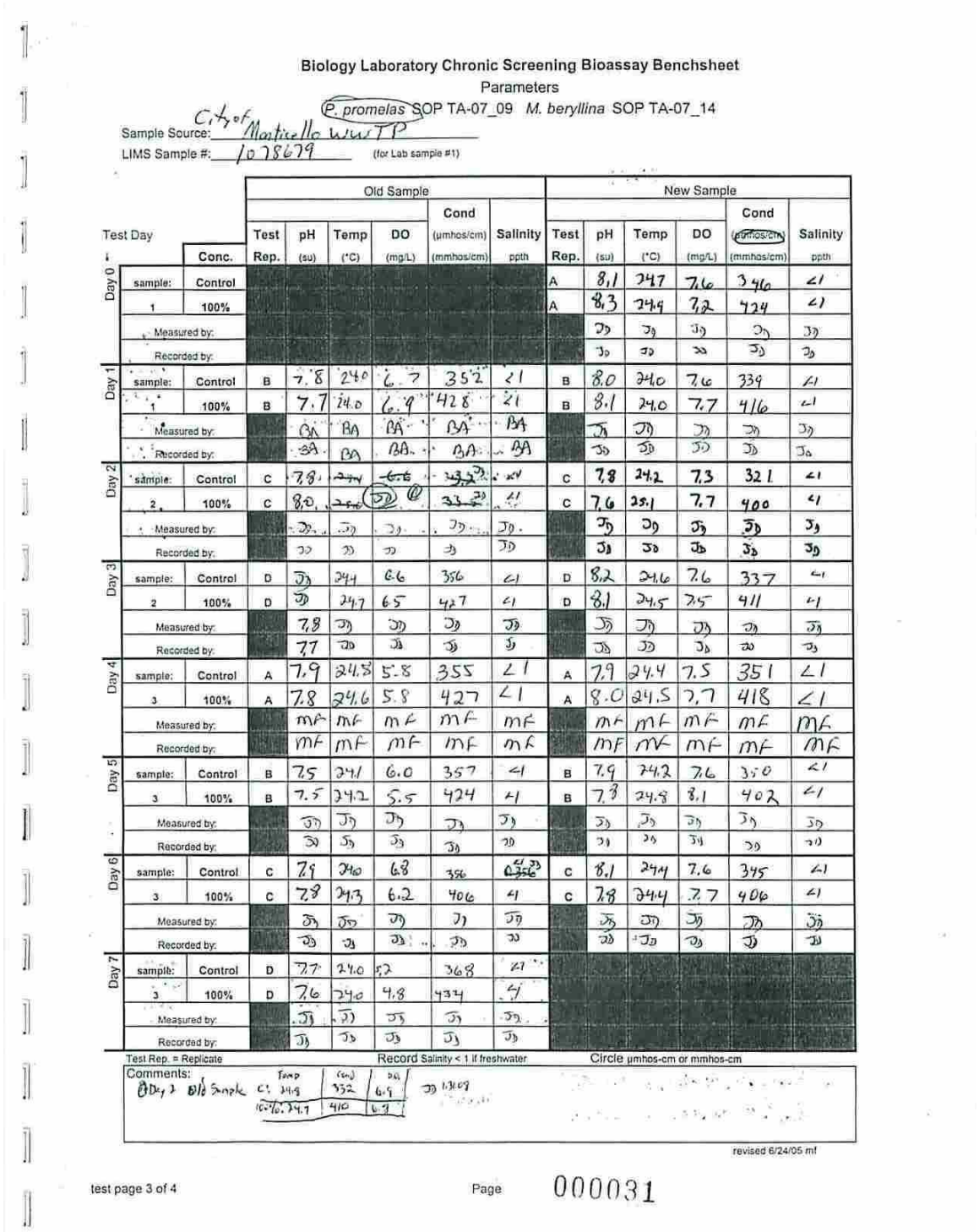
End Date: 2-5-09 Time: 1100

Concentration	Replicate (chamber)		TEST DAY 0	1	2	3	4	5	6	7
Control	A	Y1	10	10	10	10	10	9 10	9	9
	B	Y2	10	9 10	9	9	8 1M	8	8	8
	C	Y3	10	10	10	9 10	9	9	9	9
	D	Y4	10	10	10	10	10	9 10	9	9
100 % sample concentration	A	Y5	10	10	10	9 10	7 2D	5 2D	5	5
	B	Y6	10	10	10	10	6 4D	6	6	6
	C	Y7	10	10	10	5 5D	2 3D	2	2	2
	D	Y8	10	10	9 10	5 4D	5	4 10	4	4
Control	A		10							
	B		10							
	C		10							
	D		10							
% sample concentration	A		10							
	B		10							
	C		10							
	D		10							
Loaded by: JD	Checked by:		[redacted]	JD	JD	JD	MF	JD	JD	JD
Verified by: MF										

m = missing
D = dead

Comments: Survival T-Test calculated t value = 5.24090
table value t 6 degrees of freedom = 1.94300
Survival NOEC = <100% LOEC = 100%.

Appendix B. (continued)



Biology Laboratory Chronic Screening Bioassay Benchsheet

Parameters

P. promelas SOP TA-07_09 *M. beryllina* SOP TA-07_14

Sample Source: City of Monticello WWTP

LIMS Sample #: 078679 (for Lab sample #1)

Test Day			Old Sample						New Sample					
			Test	pH	Temp	DO	Cond (µmhos/cm) (mmhos/cm)	Salinity	Test	pH	Temp	DO	Cond µmhos/cm (mmhos/cm)	Salinity
		Conc.	Rep.	(su)	(°C)	(mg/L)		ppth	Rep.	(su)	(°C)	(mg/L)		ppth
Day 0	sample:	Control							A	8.1	24.7	7.6	346	<1
	1	100%							A	8.3	24.9	7.2	424	<1
	Measured by:									JD	JD	JD	JD	JD
	Recorded by:									JD	JD	JD	JD	JD
Day 1	sample:	Control	B	7.8	24.0	6.7	352	<1	B	8.0	24.0	7.6	339	<1
	1	100%	B	7.7	24.0	6.9	428	<1	B	8.1	24.0	7.7	416	<1
	Measured by:			BA	BA	BA	BA	BA		JD	JD	JD	JD	JD
	Recorded by:			BA	BA	BA	BA	BA		JD	JD	JD	JD	JD
Day 2	sample:	Control	C	7.8	~~7.4~~	~~6.6~~	~~43.2~~ JD	<1	C	7.8	24.2	7.3	321	<1
	2	100%	C	8.0	~~7.6~~ JD	@	33.2 JD	<1	C	7.6	25.1	7.7	400	<1
	Measured by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Recorded by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
Day 3	sample:	Control	D	JD	24.4	6.6	356	<1	D	8.2	24.6	7.6	337	<1
	2	100%	D	JD	24.7	6.5	427	<1	D	8.1	24.5	7.5	411	<1
	Measured by:			7.8	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Recorded by:			7.7	JD	JD	JD	JD		JD	JD	JD	JD	JD
Day 4	sample:	Control	A	7.9	24.8	5.8	355	<1	A	7.9	24.4	7.5	351	<1
	3	100%	A	7.8	24.6	5.8	427	<1	A	8.0	24.5	7.7	418	<1
	Measured by:			MF	MF	MF	MF	MF		MF	MF	MF	MF	MF
	Recorded by:			MF	MF	MF	MF	MF		MF	MF	MF	MF	MF
Day 5	sample:	Control	B	7.5	24.1	6.0	357	<1	B	7.9	24.2	7.6	350	<1
	3	100%	B	7.5	24.2	5.5	424	<1	B	7.8	24.8	8.1	402	<1
	Measured by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Recorded by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
Day 6	sample:	Control	C	7.9	24.0	6.8	356	~~0.356~~ <1 JD	C	8.1	24.4	7.6	345	<1
	3	100%	C	7.8	24.3	6.2	406	<1	C	7.8	24.4	7.7	406	<1
	Measured by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Recorded by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
Day 7	sample:	Control	D	7.7	24.0	5.2	368	<1						
	3	100%	D	7.6	24.0	4.8	434	<1						
	Measured by:			JD	JD	JD	JD	JD						
	Recorded by:			JD	JD	JD	JD	JD						

Test Rep. = Replicate Record Salinity < 1 if freshwater Circle µmhos-cm or mmhos-cm

Comments: BDay 2 Blk Sample Temp Cond DO JD 1.3.08

Temp	Cond	DO
C: 24.8	332	6.9
16.26.24.7	410	6.9

revised 6/24/05 mf

test page 3 of 4 Page 000031

Appendix B. (continued)

FDEP Biology Laboratory - Chronic Screen Bench Sheet

Facility: Monticello

LIMS Sample Number: 1078679 for lab sample #1

Concentration	Replicate	Pan #	Pan wt. (g)	Pan + Fish (g)	Fish wt. (g)	Original # Fish	Mean wt. (mg)
			mean wt = fish wt divided by 10 convert g to mg: move decimal 3 places to right				
Control	A	1	0.02280	0.02877	0.00597	10	.597
	B	2	0.02198	0.02824	0.00626	10	.626
	C	3	0.02174	0.02777	0.00603	10	.603
	D	4	0.02278	0.02851	0.00573	10	.573
100 % sample	A	5	0.02175	0.02572	0.00397	10	.397
	B	6	0.02219	0.02653	0.00434	10	.434
	C	7	0.02100	0.02267	0.00167	10	.167
	D	8	0.02251	0.02534	0.00283	10	.283
Control	A					10	
	B					10	
	C					10	
	D					10	
% sample	A					10	
	B					10	
	C					10	
	D					10	
	Weighed by initials:		JD	JD			

Growth	%CV	PMSD
Control	3.6%	19.9%

Growth	Table	Calculated	dF
T-test	1.94300	4.55786	6

Drying	
Temperature °C:	100
Hours:	8

Tare Weighing Date: Final Weighing Date: 2.6.08

			Measured Value		S-weight Value
Tare Pan 1 after Pan 5	0.02282 @	0.02280	S-weights	0.02001 @	0.02
Tare Pan 1 after Pan 8	0.02282 @	0.02280	at tare	0.05005 @	0.05
Final Pan 1 after Pan 5	(A) ~~.02282 @ .02280~~		S-weights	0.02000 @	0.02
Final Pan 1 after Pan 8	JD ~~.02282 @ .02280~~		at final	0.05005 @	0.05

Comments:

(A) F.pan 1.5 0.02877 @ 0.02877 JD. Transcription error

F.pan 1.8 0.02882 @ 0.02877

Test Page 4 of 4 PAGE 000032 revised 08/24/06 MF/SP

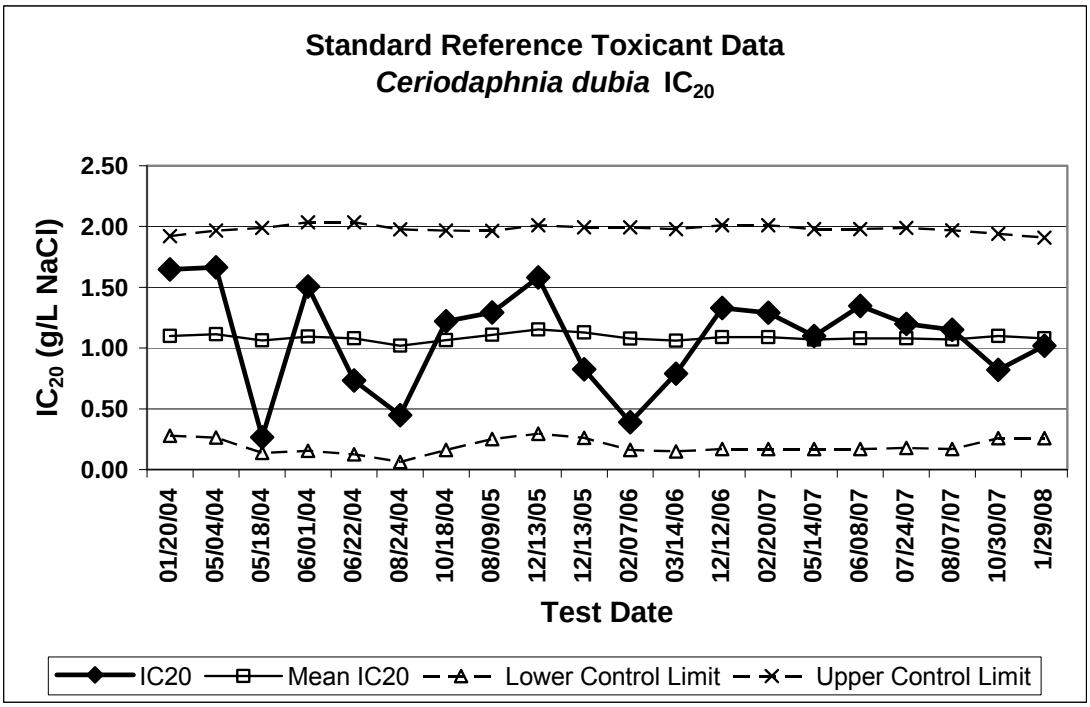
Appendix C. SRT Bench Sheets and Statistical Analysis

Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 7-Day Chronic Toxicity
Ceriodaphnia dubia (water flea) - Sodium Chloride (NaCl)

Date	IC20	Mean IC20	Std Dev	Lower Control Limit	Upper Control Limit
01/20/04	1.65	1.10	0.41	0.28	1.92
05/04/04	1.66	1.12	0.43	0.26	1.97
05/18/04	0.27	1.06	0.46	0.14	1.99
06/01/04	1.51	1.10	0.47	0.15	2.04
06/22/04	0.73	1.08	0.48	0.13	2.03
08/24/04	0.45	1.02	0.48	0.06	1.98
10/18/04	1.22	1.07	0.45	0.16	1.97
11/16/04	1.29	1.11	0.43	0.25	1.96
08/09/05	1.58	1.15	0.43	0.30	2.01
12/13/05	0.83	1.13	0.43	0.26	1.99
02/07/06	0.39	1.08	0.46	0.16	1.99
03/14/06	0.79	1.06	0.46	0.15	1.98
12/12/06	1.33	1.09	0.46	0.17	2.01
02/20/07	1.29	1.09	0.46	0.17	2.01
05/14/07	1.10	1.07	0.45	0.17	1.98
06/08/07	1.35	1.08	0.45	0.17	1.98
07/24/07	1.20	1.08	0.45	0.18	1.99
08/07/07	1.15	1.07	0.45	0.17	1.97
10/30/07	0.82	1.10	0.42	0.26	1.94
1/29/08	1.02	1.08	0.41	0.26	1.91

Means are of the last 20 SRT tests.
Lower Confidence Limit = mean - 2 * Std Dev
Upper Confidence Limit = mean + 2 * Std Dev



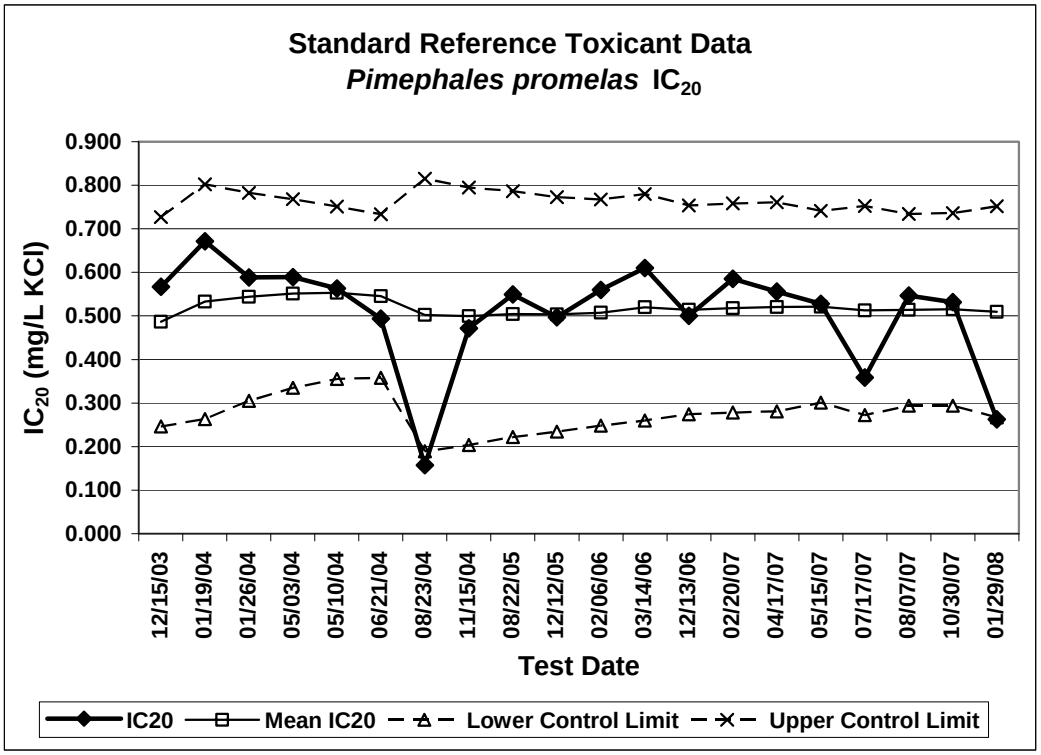
Appendix C. (continued)

Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 7-Day Chronic Toxicity
Pimephales promelas (fathead minnow) - Potassium Chloride (KCl)

Date	IC20	Mean IC20	Std Dev	Lower Control Limit	Upper Control Limit
12/15/03	0.567	0.487	0.12	0.246	0.727
01/19/04	0.671	0.533	0.13	0.263	0.802
01/26/04	0.588	0.544	0.12	0.305	0.782
05/03/04	0.589	0.551	0.11	0.335	0.768
05/10/04	0.563	0.553	0.10	0.355	0.751
06/21/04	0.494	0.546	0.09	0.358	0.734
08/23/04	0.157	0.503	0.16	0.190	0.815
11/15/04	0.472	0.499	0.15	0.204	0.795
08/22/05	0.549	0.504	0.14	0.222	0.786
12/12/05	0.497	0.503	0.13	0.234	0.772
02/06/06	0.559	0.508	0.13	0.248	0.767
03/14/06	0.610	0.520	0.13	0.260	0.780
12/13/06	0.501	0.514	0.12	0.274	0.754
02/20/07	0.585	0.518	0.12	0.278	0.758
04/17/07	0.556	0.521	0.12	0.281	0.761
05/15/07	0.528	0.521	0.11	0.301	0.741
07/17/07	0.358	0.513	0.12	0.273	0.753
08/07/07	0.547	0.514	0.11	0.294	0.734
10/30/07	0.531	0.515	0.11	0.294	0.736
01/29/08	0.263	0.509	0.12	0.267	0.752

Means are from all SRT tests, up to 20 tests..
Lower Confidence Limit = mean - 2 * Std Dev
Upper Confidence Limit = mean + 2 * Std Dev



FDEP Biology Laboratory - Chronic SRT Bench Sheet

Ceriodaphnia dubia

Diluent/ Batch: 20% DMW / 1-24-08 Test Days Used: 0 – 2
20% DMW / 1-31-08 Test Days Used: 3 – 5
Toxicant/ Batch: NaCl / 1-28-08 3ppth

SOP # : TA 07_05
EPA-821-R-02-013 Method 1002.0

Organism: *Ceriodaphnia dubia*
Organism Batch #/ Age: 4-08 / <24 hr.
Feeding: Prior to Test and Daily
Food: (YCT) (*P. subcapitata*)
Food Batch: 7-26-07 7-26-07 (Day 0-3)
Chamber size: 30 mL 1-31-08 (Day 4 – 5)
Test Volume: 20 mL

Start Date: 1-29-08 Time: 1330
End Date: 2-5-08 Time: 1430
MF

Water Quality Parameters	20% DMW	Diluent (or other)	Method	Measured by: MF	Verified by:
Lab Total Residual Cl_2 (mg/L):	<0.03	<0.03	HACH	20 ml + 20 ml DPD	MF/BA
Alkalinity (mg/L as $CaCO_3$):	80	82	HACH	BA	MF
Hardness (mg/L as $CaCO_3$):	95	86	HACH	BA	MF
Total Ammonia (mg/L as N):	<0.017	<0.017	DENVER	MF	BA
Conductivity (umhos-cm) mmhos-cm :	185	175	YSI / (Mettler)	MF	BA

Results	
Control % CV:	10.3
Dunnetts PMSD:	13.5%
Reproduction NOEC:	0.89 g/L
Reproduction LOEC:	1.3 g/L
Survival NOEC:	2.0 g/L
Survival LOEC:	3.0 g/L
ICP_{20}:	1.77 g/L
ICP_{25}:	1.88 g/L

Day	Concentrations prepared by	Counted by
0	MF	MF
1	MF	MF
2	BA	BA
3	MF	MF
4	MF	MF
5	BA	BA
6	—	MF/BA
7		
8		

Test Replicate	Loaded from culture vial
1	B20
2	A6
3	B8
4	A11
5	B16
6	A26
7	B3
8	A24
9	B14
10	B5

Comments:

Investigators' signatures

Marshall Faircloth
Jane Davis

Loretta C. Wolfe
REVIEWER

Light Intensity : 50 - 100 ft. candles
Photoperiod : 16 light 8 dark
Temperature Range °C:
Incubator # 2 min. 25.5 max. 26.5 mean 26.0
Incubator # ____ min. ____ max. ____ mean ____
Room B246 min. 23.2 max. 34.8 mean 24.0

Appendix C. (continued)

Ceriodaphnia dubia Survival and Reproduction

Start Date: 1-29-08 Time: 1330 Loaded by: BA
End Date: 2-4-08 Time: 14:30 Verified by: MF

Concentration	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	Live adults	Neonates per adult
Control	0												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	0	0	0	5	0	0	6	1	0	1	13	10	1.3
	4	6	6	7	0	2	6	0	5 (S)	5	7 (S)	44	10	4.4
	5	11	11	12	8	11	11	10	8	11	11	104	10	10.4
	6	15	13	18	15	16	18	16	13	16	16	156	10	15.6
	7													
	8													
	Total	32	30	37	28	29	35	32	27	32	35	317	10	31.7
0.59 ppth	0												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	0	0	5	5	0	0	0 X (A)	0	0	0	10	(9) (B) 10	1.0
	4	6	3	0	0	7	6	|	4	6	7	39	9	4.33
	5	12	12	12	11	14	11	|	11	11	11	105	9	11.66
	6	13	15	14	14	15	18	|	12	12	16	129	9	14.33
	7							|						
	8							|						
	Total	31	30	31	30	36	35	-	27	29	34	283	9	31.44
0.89 ppth	0												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	0	0	0	3	0	0	4	0	0	0	7	10	0.7
	4	5	6	4	0	7	3	0	0	5	7	37	10	3.7
	5	9	12	12	10	11	8	11	0	11	9	93	10	9.3
	6	13	15	14	12	12	13	20	0	13	14	126	10	12.6
	7													
	8													
	Total	27	33	30	25	30	24	35	0	29	30	263	10	26.3

Comments: (A) Dropped replicate and lost organism MF 2/1/08
(B) There was no neonate and the adult was alive prior to being dropped MF 2/1/08
(S) (S) 1:1 brood MF 2-2-08
Replicate 8 0.89 concentration female verified by Mike Heyer

Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Bench Sheet

Ceriodaphnia dubia Survival and Reproduction

Concentration	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	Live adults	Neonates per adult
1.3 ppth	0												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	0	0	0	3	0	0	3	0	0	0	6	10	0.6
	4	4	2	2	0	3	5	0	0	3	5	24	10	2.4
	5	8	8	9	9	√5	√11	9	0	6	10	75	10	7.5
	6	11	12	13	10	7	11	15	0	10	16	105	10	10.5
	7													
	8													
	Total	23	22	24	22	15	27	27	0	19	31	210	10	21.0
2.0 ppth	0												10	
	1												10	
	2	0	X	0	0	0	X	0	0	0	0	0	8	0
	3	0		0	X	0		0	0	0	0	0	7	0
	4	0		0		4		0	0	0	3	7	7	~~0~~ 1 1 BA
	5	2		2		6		5	0	0	5	20	7	2.86
	6	0		0		0		11	0	0	0	11	7	1.57
	7													
	8													
	Total	2	0	2	0	10	0	16	0	0	8	38	~~8~~ 7 (4w)	3.8
3.0 ppth	0												10	
	1												10	
	2	X	X	X	X	X	0	X	X	X	X	0	1	0
	3						X							
	4													
	5													
	6													
	7													
	8													
	Total	0	0	0	0	0	0	0	0	0	0	0	10	0

Comments: Conc 1.3 rep 8 = male verified by Mike Heyn FDEP Biology Lab
Conc 2.0 Rep 9 and Rep 8 = Female verified by Mike Heyn FDEP Biology Lab

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Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Bench Sheet

Ceriodaphnia dubia Parameters

Test Day ↓	Conc.	New Sample Replicate	pH (su)	Temp (°C)	DO (mg/L)	Conductivity (µmhos/cm) (mmhos/cm)	Old Sample Replicate	pH (su)	Temp (°C)	DO (mg/L)	Conductivity (µmhos/cm) (mmhos/cm)
Day 0	Control	M	8.2	25.1	7.1	0.185					
	0.59 ppth	M	8.2	25.0	7.1	1.35					
	0.89 ppth	M	8.2	24.9	7.3	1.89					
	1.3ppth	M	8.1	24.9	7.2	2.79					
	2.0 ppth	M	8.1	24.4	7.3	3.88					
	3.0 ppth	M	8.1	24.2	7.2	5.49					
	Measured by:		MF	MF	MF	MF					
	Recorded by:		MF	MF	MF	MF					
Day 1	Control	M	8.0	25.5	7.6	0.183	A	7.9	24.0	7.1	0.203
	0.59 ppth	M	8.0	24.7	7.6	1.28	A	7.9	24.0	7.1	1.35
	0.89 ppth	M	8.1	24.1	7.6	1.81	A	8.0	24.3	7.1	1.86
	1.3ppth	M	8.1	24.0	7.5	2.61	A	8.0	24.1	7.0	2.72
	2.0 ppth	M	8.1	24.0	7.6	3.75	A	8.0	24.3	7.3	3.83
	3.0 ppth	M	8.0	24.0	7.6	5.48	A	8.0	24.3	7.4	5.54
	Measured by:		BA	BA	BA	BA		BA	BA	BA	BA
	Recorded by:		BA	BA	BA	BA		BA	BA	BA	BA
Day 2	Control	M	8.1	24.7	7.2	0.178	A	8.2	24.0	7.8	0.184
	0.59 ppth	M	8.1	24.9	7.8	1.26	A	8.1	24.0	7.8	1.31
	0.89 ppth	M	8.1	24.9	7.7	1.77	A	8.0	24.0	7.7	1.85
	1.3ppth	M	8.0	24.6	7.6	2.51	A	8.0	24.0	7.4	2.63
	2.0 ppth	M	8.1	24.4	7.6	3.55	A	8.0	24.0	7.4	3.78
	3.0 ppth	M	8.0	24.2	7.5	5.18	A	8.1	24.0	7.2	5.32
	Measured by:		BA	BA	BA	BA		BA	BA	BA	BA
	Recorded by:		BA	BA	BA	BA		BA	BA	BA	BA
Day 3	Control	M	7.9	24.0	7.8	0.175	A	8.3	24.5	7.5	MF 1.75 1.88 (A)
	0.59 ppth	M	7.9	24.1	7.8	1.23	A	8.1	24.5	7.5	MF ~~1.23~~ 1.30 (A)
	0.89 ppth	M	7.9	24.0	7.7	1.78	A	8.1	24.7	7.5	MF ~~1.78~~ 1.84 (A)
	1.3ppth	M	7.9	24.2	7.7	2.61	A	8.1	24.8	7.5	2.69
	2.0 ppth	M	7.9	24.3	7.7	3.74	A	8.1	24.7	7.5	MF ~~3.74~~ 3.71 (A)
	3.0 ppth	M	—	—	—	—	—	—	—	—	—
	Measured by:		MF	MF	MF	MF		MF	MF	MF	MF
	Recorded by:		MF	MF	MF	MF		MF	MF	MF	MF

Comments: (A) wrote new conductivities in old spaces - MF 2/1/08

M= "Metered" vial, a surrogate vial for parameters

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Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Bench Sheet

Ceriodaphnia dubia Parameters

Test Day	Conc.	Replicate	New Sample pH (su)	Temp (°C)	DO (mg/L)	Conductivity (µmhos/cm) (mmhos/cm)	Replicate	Old Sample pH (su)	Temp (°C)	DO (mg/L)	Conductivity (µmhos/cm) (mmhos/cm)
Day 4	Control	M	8.1	24.2	8.0	0.180	A	8.2	24.1	7.5	0.183
	0.59 ppth	M	8.0	24.1	8.0	1.28	A	8.1	24.1	7.4	1.29
	0.89 ppth	M	7.9	24.2	7.9	1.84	A	8.1	24.2	7.4	1.85
	1.3ppth	M	7.9	24.3	7.8	2.63	A	8.1	24.3	7.3	2.64
	2.0 ppth	M	7.9	24.3	7.7	3.76	A	8.0	24.5	7.3	3.77
	3.0 ppth	M	—	—	—	—	—	—	—	—	—
	Measured by:		MF	MF	MF	MF		MF	MF	MF	MF
	Recorded by:		MF	MF	MF	MF		MF	MF	MF	MF
Day 5	Control	M	7.9	24.0	8.5	0.180	A	8.1	24.0	8.5	0.187
	0.59 ppth	M	7.9	24.0	8.5	1.28	A	8.1	24.0	8.4	1.34
	0.89 ppth	M	8.0	24.0	8.4	1.83	A	8.1	24.0	8.4	1.84
	1.3ppth	M	8.0	24.0	8.4	2.64	A	8.1	24.0	8.3	2.78
	2.0 ppth	M	8.0	24.0	8.4	3.78	A	8.1	24.0	8.4	3.83
	3.0 ppth	M					A				
	Measured by:		BA	BA	BA	BA		BA	BA	BA	BA
	Recorded by:		BA	BA	BA	BA		BA	BA	BA	BA
Day 6	Control	M					A	8.1	24.0	7.1	0.188
	0.59 ppth	M					A	8.0	24.0	7.0	1.31
	0.89 ppth	M					A	8.0	24.0	6.9	1.89
	1.3ppth	M					A	8.0	24.0	6.9	2.70
	2.0 ppth	M					A	8.0	24.0	6.9	3.78
	3.0 ppth	M					A	—	—	—	—
	Measured by:							BA	BA	BA	BA
	Recorded by:							BA	BA	BA	BA
Day 7	Control	M									
	0.59 ppth	M									
	0.89 ppth	M									
	1.3ppth	M									
	2.0 ppth	M									
	3.0 ppth	M									
	Measured by:										
	Recorded by:										
Day 8	Control	M									
	0.59 ppth	M									
	0.89 ppth	M									
	1.3ppth	M									
	2.0 ppth	M									
	3.0 ppth	M									
	Measured by:										
	Recorded by:										

Not Renewed 2-4-08 BA

Replicate M= "Metered" vial, a surrogate vial for parameters

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Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or *Menidia beryllina*

Test Species (circle one)

(*P. promelas*)	SOP#: TA07_09	EPA-821-R-02-013	Method 1000.0
M. beryllina	SOP#: TA07_14	EPA-821-R-02-014	Method 1006.0

Diluent/ Batch: MHW/1-28-08 Test Days Used: 0-6

Diluent/ Batch: — Test Days Used: —

Toxicant/ Batch # : KCl / 428-09

Artemia Lot # : 651-536-90

Start Date: 1-29-08 Time: 1200

End Date: 2-5-08 Time: 1300

Organism Batch #/ Age: 1-29-08 / <24 hrs

Artemia Batch #		Day 2	10-08	Day 5	16-08
Day 0	6-08	Day 3	12-08	Day 6	18-08
Day1	8-08	Day 4	14-08		

Chamber size : 1000 ml

Test volume : 500 ml

Feeding: *P. promelas* 0.15 g wet wt. 2X day 6 hour interval

M. beryllina 0.10 g wet wt days 0-2 0.15g wet wt. days 3-7

Water Quality Parameters	Diluent	Diluent (or other)	Method	Measured by	Verified by
Total Residual Cl_2 (mg/L):	<0.03		HACH	MF	BA
Alkalinity (mg/L as $CaCO_3$):	77		HACH	BA	MF
Hardness (mg/L as $CaCO_3$):	98		HACH	BA	MF
Total Ammonia (mg/L as N):	<0.017		DENVER	MF	BA
Conductivity (µmhos-cm) mmhos-cm:	345		METTLER	"	BA

Statistics	
Growth NOEC:	0.0625 MF
Growth LOEC:	0.0625
Growth IC_{20}:	0.263
Growth IC_{25}:	0.315
Ctrl % CV:	MF ~~30.4~~ % 4.6%
Dunnetts PMSD:	30.4 %
Survival NOEC:	0.25
Survival LOEC:	0.5

Light Intensity : 50 - 100 ft. candles

Photoperiod : 16 light 8 dark

Temperature Range °C:

Incubator # 2 min. 25.5 max. 26.5 mean 26.0

Water bath # ____ min. _____ max. _____ mean _____

Room B246 min. 23.2 max. 24.8 mean 24.0

P. promelas PMSD Bounds for Growth: Lower 12 Upper 30

M. beryllina PMSD Bounds for Growth: Lower 11 Upper 28

Investigators' signatures

James Daniels

Blair Aden

Marshall Faircloth

Loretta C. Wolfe
REVIEWER

Comments:

Test Page 1 of 6

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revised 8/24/06 MF/SP

Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or Menidia beryllina Survival

Organism: ~~P. promelas~~ M.beryllina (circle one) D = dead M = missing

Concentration: µg/L ~~g/L~~ (circle one)

			TEST DAY							
Concentration	Replicate	Chamber	0	1	2	3	4	5	6	7
Control	A	A1	10	10	10	10	10	10	10	10
	B	A2	10	10	10	10	10	10	10	10
	C	A3	10	10	10	10	10	10	10	10
	D	A4	10	10	10	10	10	10	10	10
.0625	A	A5	10	9D	9	9	9	9	9	9
	B	A6	10	10	10	10	10	10	10	10
	C	A7	10	10	10	10	10	10	10	10
	D	A8	10	10	10	10	10	10	10	10
.125	A	A9	10	10	10	10	10	10	9D	9
	B	A10	10	10	10	10	10	10	10	10
	C	A11	10	10	10	10	10	10	10	10
	D	A12	10	10	10	10	10	10	9D	9
.25	A	A13	10	~~5D~~ 10	10	10	10	10	10	10
	B	A14	10	~~9D~~ 10	10	10	10	10	10	10
	C	A15	10	9D	9	9	9	9	9	9
	D	A16	10	10	10	10	10	10	10	10
.5	A	A17	10	~~10~~ 5D	5	5	5	5	5	5
	B	A18	10	~~10~~ 9	9	8D	8	7D	0 7D	-
	C	A19	10	5 5D	5	5	5	5	5	5
	D	A20	10	8 8D	8	8	8	8	8	8
1.0	A	A21	10	0 0D	—	—	—	—	—	—
	B	A22	10	1 9D	1	1	1	1	W 3D 1	1
	C	A23	10	1 9D	1	1	1	1	1	1
	D	A24	10	2 8D	1 1D	1	0 1D	—	—	—
	A		10							
	B		10							
	C		10							
	D		10							
Loaded by (0 hr): JD			Checked by*:	JD	JD	JD	JD	JD	JD	JD
			Concentrations prepared by:	JD	JD	JD	JD	JD	JD	JD

Comments: Replicate A15 for .25 5.0 and 10 were 30-48 hr.

*verified by for 0 hour

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Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or *Menidia beryllina* Parameters

Start Date: 1.29.08 Time: 1300

End Date: 2-5-08 Time: 1300

Organism: *P. promelas* *M.beryllina* (circle one)

Concentration: µg/L (circle one)

circle µmhos or mmhos

Test Day		Before Renewal					Test Start and After Renewal				
	Concentration	Test Replicate	pH (su)	Temp (°C)	DO (mg/L)	Conductivity µmhos (mmhos)	Test Replicate	pH (su)	Temp (°C)	DO (mg/L)	Conductivity µmhos (mmhos)
Day 0	Control						A	8.1	24.6	7.6	0.345
	.0625						A	8.1	25.0	7.7	0.477
	.125						A	8.1	25.0	7.5	0.636
	.25						A	8.1	24.9	7.5	0.879
	.5						A	8.2	24.6	7.5	1.45
	1.0						A	8.1	24.7	7.4	2.46
							A				
	Measured by:							JD	JD	JD	JD
	Recorded by:							JD	JD	JD	JD
	Concentration	Replicate	pH	Temp	DO	Conductivity	Replicate	pH	Temp	DO	Conductivity
Day 1	Control	B	7.8	24.0	7.4	0.371	B	7.9	24.0	7.8	0.340
	.0625	B	7.8	24.1	7.2	0.477	B	7.9	24.1	7.8	0.487
	.125	B	7.8	24.0	7.1	0.616	B	7.9	24.0	7.7	0.610
	.25	B	7.8	24.0	7.0	~~1.46~~ 0.886 BA	B	8.0	24.0	7.7	0.999
	.5	B	7.8	24.0	7.1	1.46	B	8.0	24.0	7.6	1.26
	1.0	B	7.7	24.0	7.0	2.41	B	8.0	24.0	7.3	2.41
		B					B				
	Measured by:		BA	BA	BA	BA		JD	JD	JD	JD
	Recorded by:		BA	BA	BA	BA		JD	JD	JD	JD
	Concentration	Replicate	pH	Temp	DO	Conductivity	Replicate	pH	Temp	DO	Conductivity
Day 2	Control	C	7.9	24.7	7.0	0.328	C	8.2	24.0	7.4	0.320
	.0625	C	7.8	25.0	6.9	0.470	C	8.1	24.0	7.4	0.460
	.125	C	7.8	25.1	6.9	0.619	C	8.1	24.2	7.4	0.580
	.25	C	7.8	24.7	6.9	0.858	C	8.1	24.2	7.4	0.935
	.5	C	7.8	24.7	6.9	1.35	C	8.1	24.1	7.3	1.33
	1.0	C	7.8	24.8	6.9	2.34	C	8.1	24.0	7.0	2.30
		C					C				
	Measured by:		JD	JD	JD	JD		JD	JD	JD	JD
	Recorded by:		JD	JD	JD	JD		JD	JD	JD	JD
	Concentration	Replicate	pH	Temp	DO	Conductivity	Replicate	pH	Temp	DO	Conductivity
Day 3	Control	D	8.0	24.2	6.3	0.346	D	8.0	24.5	7.6	0.336
	.0625	D	7.9	24.5	6.5	0.496	D	8.0	24.6	7.6	0.476
	.125	D	7.9	24.6	6.6	0.622	D	8.0	24.6	7.6	0.604
	.25	D	7.9	24.6	6.4	0.886	D	8.0	24.4	7.5	0.880
	.5	D	7.9	24.5	6.3	1.43	D	8.0	24.1	7.2	1.70
	1.0	D	7.9	24.6	6.3	2.49	D	8.0	24.0	7.2	2.40
		D					D				
	Measured by:		JD	JD	JD	JD		JD	JD	JD	JD
	Recorded by:		JD	JD	JD	JD		JD	JD	JD	JD

Comments:

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Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or *Menidia beryllina* Parameters

Organism: (*P. promelas*) *M.beryllina* (circle one)

Concentration: µg/L (100) (circle one)

circle µmhos or mmhos

Test Day		Before Renewal					After Renewal					
	Concentration	Test Replicate	pH (su)	Temp (°C)	DO (mg/L)	Conductivity µmhos (mmhos)	Test Replicate	pH (su)	Temp (°C)	DO (mg/L)	Conductivity µmhos (mmhos)
Day 4	Control	A	7.9	24.0	7.4	0.342	A	8.0	24.2	7.7	0.357
	.0625	A	7.8	24.5	7.0	0.491	A	8.0	24.0	7.6	0.479
	.125	A	7.8	24.5	6.7	0.623	A	8.0	24.0	7.6	0.622
	.25	A	7.8	24.5	5.8	0.929	A	8.0	24.0	7.5	0.878
	.50	A	7.7	24.5	5.7	1.42	A	8.0	24.0	7.4	1.42
	1.0	A	7.7	24.5	5.9	2.60	A	8.0	24.8	7.5	2.50
		A	-				A				
	Measured by:		JD	JD	JD	JD		JD	JD	JD	JD
	Recorded by:		JD	JD	JD	JD		JD	JD	JD	JD
	Concentration	Replicate	pH	Temp	DO	Conductivity	Replicate	pH	Temp	DO	Conductivity
Day 5	Control	B	7.7	24.2	7.0	0.360	B	8.0	24.0	7.8	0.350
	.0625	B	7.7	24.5	7.1	0.490	B	8.1	25.4	7.8	0.476
	.125	B	7.6	24.9	6.0	0.633	B	8.0	25.9	7.7	0.631
	.25	B	7.6	24.6	6.0	0.906	B	8.0	25.9	7.6	0.859
	.5	B	7.6	24.4	6.1	1.45	B	8.0	25.9	7.6	1.42
	1.0	B	7.7	24.5	6.3	2.54	B	8.0	25.8	7.6	2.47
		B					B				
	Measured by:		JD	JD	JD	JD		JD	JD	JD	JD
	Recorded by:		JD	JD	JD	JD		JD	JD	JD	JD
	Concentration	Replicate	pH	Temp	DO	Conductivity	Replicate	pH	Temp	DO	Conductivity
Day 6	Control	C	7.9	24.5	6.6	0.355	C	8.0	24.6	7.4	0.340
	.0625	C	7.7	24.6	5.6	0.472	C	7.9	25.8	7.2	0.487
	.125	C	7.7	24.7	6.0	0.627	C	8.0	25.9	7.2	0.629
	.25	C	7.7	24.8	5.6	0.907	C	8.0	25.9	7.2	0.841
	.5	C	7.7	24.8	5.7	1.43	C	8.0	25.9	7.2	JD 1.35
	1.0	C	7.7	24.7	5.8	2.51	C	8.0	25.0	7.2	2.20
		C					C				
	Measured by:		JD	JD	JD	JD		JD	JD	JD	JD
	Recorded by:		JD	JD	JD	JD		JD	JD	JD	JD
	Concentration	Replicate	pH	Temp	DO	Conductivity	Replicate	pH	Temp	DO	Conductivity
Day 7	Control	D	7.7	24.2	4.4	0.360	D				
	.0625	D	7.6	24.4	4.6	0.505	D				
	.125	D	7.6	24.4	4.7	0.645	D				
	.25	D	7.6	24.7	4.5	0.932	D				
	.5	D	7.6	24.4	4.6	1.43	D				
	1.0	D	7.6	24.4	5.4	2.32	D				
		D					D				
	Measured by:		JD	JD	JD	JD					
	Recorded by:		JD	JD	JD	JD					

Comments:

Test Page 4 of 6

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revised 8/24/06 MF/SP

Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or *Menidia beryllina* Weights

SOP TA06_21

Organism: ~~*P. promelas*~~ *M.beryllina* (circle one)

Concentration: µg/L ~~g/L~~ (circle one)

mean wt = fish wt divided by 10

convert g to mg: move decimal 3 places to right

Concentration	Replicate	Pan #	Pan wt. (g)	Pan + Fish (g)	Fish wt. (g)	Original # of fish	Mean wt. (mg)
Control	A	9	0.02229	0.03035	0.00806	10 10	0.806
	B	10	0.02220	0.03071	0.00851	10 10	0.851
	C	11	0.02232	0.02993	0.00761	10 10	0.761
	D	12	0.02114	0.02909	0.00795	10 10	0.795
.0625	A	13	0.02145	0.02674	0.00529	10 9	0.529
	B	14	0.02160	0.02754	0.00594	10 10	0.594
	C	15	0.02026	0.02566	0.00540	10 10	0.540
	D	16	0.02206	0.02865	0.00659	10 10	0.659
.125	A	17	0.02175	0.02927	0.00752	10 9	0.752
	B	18	0.02243	0.02828	0.00585	10 10	0.585
	C	19	0.02204	0.02919	0.00715	10 10	0.715
	D	20	0.02224	0.02843	0.00619	10 9	0.619
.25	A	21	0.02195	0.02860	0.00665	10 10	0.665
	B	22	0.02071	0.02856	0.00785	10 10	0.785
	C	23	0.02215	0.02897	0.00682	10 9	0.682
	D	24	0.02024	0.02725	0.00701	10 10	0.701
.5	A	25	0.02068	0.02649	0.00581	10 5	0.581
	B	—	~~0.02052~~ MF			10	—
	C	26	0.02052	0.02542	0.00490	10 5	0.490
	D	27	0.02087	0.02861	0.00774	10 8	0.774
1.0	A	—	—	—		10	—
	B	28	0.02074	0.02087	0.00013	10 1	MF 0.0130
	C	29	0.02096	0.02163	0.00067	10 1	0.0670
	D	—	—	—		10	—
	A					10	
	B					10	
	C					10	
	D					10	
		Weighed by:	TD	MF			

Comments:

Note: Pan number (#) refers to actual Pan number.

Test Page 5 of 6 PAGE 000029 revised 8/24/06 MF/SP

Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or *Menidia beryllina* QC

SOPs TA07_09, TA07_14 and TA06_21

Empty Pan Weights Date: 2508

	Pan 1 wt.	Pan 1 initial wt.
after Pan 5	0.02282	@ 0.02280
after Pan 10	0.02285	@ 0.02280
after Pan 15	0.02284	@ 0.02280
after Pan 20	0.02285	@ 0.02280
after Pan 25	0.02283	@ 0.02280
after Pan 30	0.02282	@ 0.02280
after Pan 35		@
after Pan 40		@
after Pan 45		@
after Pan 48		@

	Measured Value	S-weight Value
S-weights	0.02	@ 0.02
	0.05005	@ 0.05

Fish + Pan Weights Date: 2-8-08 MF

	Pan 1 wt.	Pan 1 initial wt.
after Pan 5	0.03035	@ 0.03035
after Pan 10	0.03035	@ 0.03035
after Pan 15	0.03033	@ 0.03035
after Pan 20	0.03033	@ 0.03035
after Pan 25		@
after Pan 30		@
after Pan 35		@
after Pan 40		@
after Pan 45		@
after Pan 48		@

	Measured Value	S-weight Value
S-weights	0.02000	@ 0.02000
	0.03001	@ 0.03000

Drying Oven ID: ER03400

Temperature °C: 90

Drying Hours: 12

Note: Pan number (5, 10, etc.) refers to sequence of weighing as actual Pan #s may differ.

Comments:

Test Page 6 of 6 PAGE 000030 revised 8/24/06 MF/SP

Appendix C. (continued)

T-test for *Pimephales promelas* survival in the chronic bioassay of City of Monticello WWTP effluent.						
Sample:	City of Monticello WWTP	Dates tested:	Jan 29- Feb 5, 2008			
Species:	*Pimephales promelas*	Test Type:	Chronic Screen			
						p=0.05
	Treatment A	Treatment B	# of Reps/Sample	4	df	Table t-value
	Control	100%			1	6.31400
	0.90	0.50			2	2.92000
	0.80	0.60			3	2.35300
	0.90	0.20			4	2.13200
	0.90	0.40			5	2.01500
					6	1.94300
Average	0.875	0.425			7	1.89500
					8	1.86000
	t-value=	5.24090			9	1.83300
	df=	6.00000			10	1.81200
					18	1.73400

T-test for Ceriodaphnia dubia reproduction in the chronic bioassay of City of Monticello WWTP effluent.				
Sample:	City of Monticello WWTP	Date tested:	Jan 29 - Feb. 4, 2008	
Species:	*Ceriodaphnia dubia*	Test Type:	chronic screening	
	Teatment A	Treatment B	#of Reps./sample	10
Replicate #	Control	100% Effluent		
1	26	35		p=0.05
2	27	31	df	Table t-value
3	32	29	1	6.31400
4	29	31	2	2.92000
5	27	29	3	2.35300
6	28	34	4	2.13200
7	32	34	5	2.01500
8	28	21	6	1.94300
9	31	31	7	1.89500
10	36	32	8	1.86000
			9	1.83300
Average	29.6	30.7	10	1.81200
			18	1.734
	t-value=	-0.69035		
	df=	18		

Appendix C. (continued)

Larval Fish Growth and Survival Test-7 Day Growth

Start Date:	1/29/2008	Test ID:	1ppSRT 08	Sample ID:	REF-Ref Toxicant
End Date:	2/5/2008	Lab ID:	DEP TOXLAB-FDEP Biology To	Sample Type:	KCL-Potassium chloride
Sample Date:		Protocol:	EPAF 94-EPA/600/4-91/002	Test Species:	PP-Pimephales promelas
Comments:					

Conc-gm/L	1	2	3	4
D-Control	0.8060	0.8510	0.7610	0.7950
0.0625	0.5290	0.5940	0.5400	0.6590
0.125	0.7520	0.5850	0.7150	0.6190
0.25	0.6650	0.7850	0.6820	0.7010
0.5	0.5810	0.0000	0.4900	0.7740
1	0.0000	0.0130	0.0670	0.0000

			Transform: Untransformed					Isotonic	
Conc-gm/L	Mean	N-Mean	Mean	Min	Max	CV%	N	Mean	N-Mean
D-Control	0.8033	1.0000	0.8033	0.7610	0.8510	4.625	4	0.8033	1.0000
0.0625	0.5805	0.7227	0.5805	0.5290	0.6590	10.258	4	0.6522	0.8119
0.125	0.6678	0.8313	0.6678	0.5850	0.7520	11.777	4	0.6522	0.8119
0.25	0.7083	0.8817	0.7083	0.6650	0.7850	7.517	4	0.6522	0.8119
0.5	0.4613	0.5742	0.4613	0.0000	0.7740	71.439	4	0.4613	0.5742
1	0.0200	0.0249	0.0200	0.0000	0.0670	159.635	4	0.0200	0.0249

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)	0.763252	0.884	-1.5077	8.578199
Bartlett's Test indicates unequal variances (p = 2.29E-04)	23.87617	15.08627		

Linear Interpolation (200 Resamples)

Point	gm/L	SD	95% CL(Exp)		Skew
IC05*	0.0166	0.0024	0.0110	0.0251	0.7529
IC10*	0.0332	0.0047	0.0221	0.0501	0.7529
IC15*	0.0498	0.0578	0.0331	0.3800	4.5050
IC20	0.2625	0.1353	0.0000	0.6663	0.1724
IC25	0.3151	0.0926	0.2326	0.6853	0.8683
IC40	0.4729	0.0975	0.2513	0.7426	0.0744
IC50	0.5676	0.1015	0.2597	0.7857	-0.2516

* indicates IC estimate less than the lowest concentration

Appendix C. (continued)

Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date:	1/29/2008	Test ID:	c d 12908	Sample ID:	REF-Ref Toxicant
End Date:	2/4/2008	Lab ID:	DEP TOXLAB-FDEP Biology To	Sample Type:	NACL-Sodium chloride
Sample Date:		Protocol:	EPAFW02-EPA/821/R-02-013	Test Species:	CD-Ceriodaphnia dubia
Comments:					

Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	32.000	30.000	37.000	28.000	29.000	35.000	32.000	27.000	32.000	35.000
0.59	31.000	30.000	31.000	30.000	36.000	35.000	27.000	29.000	34.000	
0.89	27.000	33.000	30.000	25.000	30.000	24.000	35.000	0.000	29.000	30.000
1.3	23.000	22.000	24.000	22.000	15.000	27.000	27.000	19.000	31.000	
2	2.000	0.000	2.000	0.000	10.000	0.000	16.000	0.000	0.000	8.000
3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

			Transform: Untransformed					Isotonic	
Conc-gm/L	Mean	N-Mean	Mean	Min	Max	CV%	N	Mean	N-Mean
D-Control	31.700	1.0000	31.700	27.000	37.000	10.308	10	31.700	1.0000
0.59	31.444	0.9919	31.444	27.000	36.000	9.422	9	31.444	0.9919
0.89	26.300	0.8297	26.300	0.000	35.000	37.343	10	26.300	0.8297
1.3	23.333	0.7361	23.333	15.000	31.000	20.216	9	23.333	0.7361
2	3.800	0.1199	3.800	0.000	16.000	147.723	10	3.800	0.1199
3	0.000	0.0000	0.000	0.000	0.000	0.000	10	0.000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)	0.856289	0.929	-1.88639	9.293612
Bartlett's Test indicates unequal variances (p = 2.78E-03)	16.18259	13.2767		

Linear Interpolation (200 Resamples)

Point	gm/L	SD	95% CL		Skew
IC05	0.6675	0.1172	0.3922	0.9411	0.0987
IC10	0.7600	0.1169	0.6365	1.0545	0.8344
IC15	0.8524	0.1378	0.7028	1.1599	0.6238
IC20	1.0199	0.1718	0.7547	1.3286	0.1187
IC25	1.2390	0.1749	0.8116	1.3785	-0.9650
IC40	1.4546	0.0473	1.3347	1.5254	-0.3349
IC50	1.5682	0.0415	1.4781	1.6419	0.0219

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: 1/28/08

Shipped to: FLDEP

P.O. No: N/A

Species	Quantity	Age	Brood Number	Temperature	Salinity
Mysidopsis bahia	350	6 DAYS	MS080122	25°C	20‰
Menidia beryllina					
Cyprinella leedsi					
Pimephales promelas	350	<24HRS	FM 080127-1550	25°C	

Packed by:

Shipped Via: FedEx

Notes:

Thank you for your order.

Appendix E. Chemical Analyses performed on the effluent from the City of Monticello Wastewater Treatment Plant Outfall D-002, sampled on January 28, 2008.

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
1/28/2008 13:22	Outfall D002	AGP/LN	Algal Growth Potential	185		mg DryWt/L	0.3	0.9
1/28/2008 13:22	Outfall D002	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.75	I	ug/L	0.27	0.79
1/28/2008 13:22	Outfall D002	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	0.47	I	mg/L	0.2	2
1/28/2008 13:22	Outfall D002	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	1.4	I	ug/L	0.61	1.9
1/28/2008 13:22	Outfall D002	Microbiology	Fecal Coliforms-Membrane Filter	64		#/100 mL	2	2
1/28/2008 8:30	Outfall D002	Toxicology	Bioassay-Chronic-Scrn-FW-C.dubia, NOEC	100		NOEC		
1/28/2008 8:30	Outfall D002	Toxicology	Bioassay-Chronic-Scrn-FW-Fish, NOEC	100	K	NOEC		
1/28/2008 13:22	Outfall D002	Metals	Zinc	46		ug/L	5	20
1/28/2008 13:22	Outfall D002	Metals	Nickel	0.7	I	ug/L	0.25	1
1/28/2008 13:22	Outfall D002	Metals	Iron	720		ug/L	30	120
1/28/2008 13:22	Outfall D002	Metals	Selenium	0.5	U	ug/L	0.5	2
1/28/2008 13:22	Outfall D002	Metals	Lead	0.23	I	ug/L	0.2	0.8
1/28/2008 13:22	Outfall D002	Metals	Aluminum	60	U	ug/L	60	240
1/28/2008 13:22	Outfall D002	Metals	Arsenic	0.89	I	ug/L	0.5	2
1/28/2008 13:22	Outfall D002	Metals	Silver	0.025	U	ug/L	0.025	0.1
1/28/2008 13:22	Outfall D002	Metals	Copper	1.7	I	ug/L	0.5	2
1/28/2008 13:22	Outfall D002	Metals	Chromium	1	U	ug/L	1	4
1/28/2008 13:22	Outfall D002	Metals	Magnesium	6.4		mg/L	0.04	0.16
1/28/2008 13:22	Outfall D002	Metals	Calcium	37.1		mg/L	0.075	0.3
1/28/2008 13:22	Outfall D002	Metals	Cadmium	0.02	U	ug/L	0.02	0.08
1/28/2008 13:22	Outfall D002	Nutrients	NO2NO3-N	3		mg N/L	0.04	0.1
1/28/2008 13:22	Outfall D002	Nutrients	Total-P	0.5		mg P/L	0.02	0.06
1/28/2008 13:22	Outfall D002	Nutrients	Kjeldahl Nitrogen	0.41		mg N/L	0.08	0.2
1/28/2008 13:22	Outfall D002	Nutrients	Ammonia-N	0.023		mg N/L	0.01	0.02
1/28/2008 13:22	Outfall D002	Nutrients	TSS	4	U	mg/L	4	16
1/28/2008 13:22	Outfall D002	Nutrients	O-Phosphate-P	0.38		mg P/L	0.016	0.04
1/28/2008 13:22	Outfall D002	Pesticides	Ethoprop	0.1	U	ug/L	0.1	0.4
1/28/2008 13:22	Outfall D002	Pesticides	Metolachlor	0.5	U	ug/L	0.5	2
1/28/2008 13:22	Outfall D002	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8
1/28/2008 13:22	Outfall D002	Pesticides	Metribuzin	0.1	U	ug/L	0.1	0.4
1/28/2008 13:22	Outfall D002	Pesticides	Bromacil	0.2	U	ug/L	0.2	0.8
1/28/2008 13:22	Outfall D002	Pesticides	Chlorpyrifos Methyl	0.1	U	ug/L	0.1	0.4
1/28/2008 13:22	Outfall D002	Pesticides	Fonofos	0.1	U	ug/L	0.1	0.4
1/28/2008 13:22	Outfall D002	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	1
1/28/2008 13:22	Outfall D002	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
1/28/2008 13:22	Outfall D002	Pesticides	Butylate	0.2	U	ug/L	0.2	0.8
1/28/2008 13:22	Outfall D002	Pesticides	Diazinon	0.05	U	ug/L	0.05	0.2

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
1/28/2008 13:22	Outfall D002	Pesticides	Hexazinone	0.1	U	ug/L	0.1	0.4
1/28/2008 13:22	Outfall D002	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.8
1/28/2008 13:22	Outfall D002	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6
1/28/2008 13:22	Outfall D002	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
1/28/2008 13:22	Outfall D002	Pesticides	Parathion Methyl	0.1	U	ug/L	0.1	0.4
1/28/2008 13:22	Outfall D002	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
1/28/2008 13:22	Outfall D002	Pesticides	Naled	0.8	U	ug/L	0.8	3.2
1/28/2008 13:22	Outfall D002	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2
1/28/2008 13:22	Outfall D002	Pesticides	Azinphos Methyl	0.2	U	ug/L	0.2	0.8
1/28/2008 13:22	Outfall D002	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2
1/28/2008 13:22	Outfall D002	Pesticides	Alachlor	0.6	U	ug/L	0.6	2.4
1/28/2008 13:22	Outfall D002	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
1/28/2008 13:22	Outfall D002	Pesticides	Atrazine	0.05	U	ug/L	0.05	0.2
1/28/2008 13:22	Outfall D002	Pesticides	Phorate	0.05	U	ug/L	0.05	0.2
1/28/2008 13:22	Outfall D002	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	2,4-Dinitrotoluene	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	2,6-Dinitrotoluene	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	2-Chlorophenol	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	3,3'-Dichlorobenzidine	39	U	ug/L	39	160
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2	U	ug/L	2	7.8
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Benzidine	98	U	ug/L	98	390
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Chrysene	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Dieldrin	1.5	U	ug/L	1.5	5.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	2-Chloronaphthalene	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9	U	ug/L	2.9	12
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	4,4'-DDT	1.5	UJ	ug/L	1.5	5.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Aldrin	1.5	U	ug/L	1.5	5.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Dimethyl phthalate	9.8	UJ	ug/L	9.8	39
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Endrin aldehyde	3.9	U	ug/L	3.9	16
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9	U	ug/L	2.9	12
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Naphthalene	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Nitrobenzene	2	U	ug/L	2	7.8
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	2,4-Dinitrophenol	15	U	ug/L	15	59
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Acenaphthylene	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Benzo(a)anthracene	0.98	U	ug/L	0.98	3.9

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Benzo(k)fluoranthene	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Fluoranthene	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Heptachlor	1.5	U	ug/L	1.5	5.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Hexachloroethane	2.9	U	ug/L	2.9	12
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Isophorone	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Phenanthrene	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	4,4'-DDD	1.5	U	ug/L	1.5	5.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9	U	ug/L	2.9	12
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Fluorene	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Hexachlorobenzene	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Hexachlorobutadiene	2.9	U	ug/L	2.9	12
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2	U	ug/L	2	7.8
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	N-Nitrosodimethylamine	2	U	ug/L	2	7.8
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Pentachlorophenol	2.9	U	ug/L	2.9	12
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	gamma-BHC	1.5	U	ug/L	1.5	5.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	59
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Anthracene	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	15	U	ug/L	15	59
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Butyl benzyl phthalate	4.9	U	ug/L	4.9	20
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Phenol	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	alpha-BHC	1.5	U	ug/L	1.5	5.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	beta-BHC	1.5	U	ug/L	1.5	5.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	delta-BHC	1.5	U	ug/L	1.5	5.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	2-Nitrophenol	0.98	UJ	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Acenaphthene	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Benzo(a)pyrene	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Endosulfan I	3.9	U	ug/L	3.9	16
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Endosulfan II	3.9	U	ug/L	3.9	16
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Pyrene	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	2,4-Dichlorophenol	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	4,4'-DDE	1.5	U	ug/L	1.5	5.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Di-n-octyl phthalate	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Endosulfan sulfate	1.5	U	ug/L	1.5	5.9

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Heptachlor epoxide	1.5	U	ug/L	1.5	5.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	2,4-Dimethylphenol	9.8	U	ug/L	9.8	39
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Benzo(b)fluoranthene	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Di-n-butyl phthalate	4.9	U	ug/L	4.9	20
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Diethyl phthalate	0.98	U	ug/L	0.98	3.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Endrin	1.5	U	ug/L	1.5	5.9
1/28/2008 13:22	Outfall D002	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9	U	ug/L	2.9	12
1/28/2008 13:22	Outfall D002	Field Parameters	Dissolved Oxygen	9.31		mg/L		
1/28/2008 13:22	Outfall D002	Field Parameters	pH	7.45				
1/28/2008 13:22	Outfall D002	Field Parameters	Temperature	14.5		C		
1/28/2008 12:10	Outfall D001	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	1.7	I	mg/L	0.2	2
1/28/2008 12:10	Outfall D001	Microbiology	Fecal Coliforms-Membrane Filter	140	B	#/100 mL	2	2
1/28/2008 12:10	Outfall D001	Nutrients	TSS	8	I	mg/L	4	16
1/28/2008 12:10	Outfall D001	Field Parameters	Dissolved Oxygen	8.12		mg/L		
1/28/2008 12:10	Outfall D001	Field Parameters	pH	7.27				
1/28/2008 12:10	Outfall D001	Field Parameters	Temperature	14.5		C		
1/28/2008 12:10	Outfall D001	Field Parameters	Total Residual Chlorine	0.91		mg/L		
1/28/2008 12:00	Field Blank	Metals	Cadmium	0.02	U	ug/L	0.02	0.08
1/28/2008 12:00	Field Blank	Metals	Zinc	5	U	ug/L	5	20
1/28/2008 12:00	Field Blank	Metals	Aluminum	60	U	ug/L	60	240
1/28/2008 12:00	Field Blank	Metals	Selenium	0.5	U	ug/L	0.5	2
1/28/2008 12:00	Field Blank	Metals	Copper	0.5	U	ug/L	0.5	2
1/28/2008 12:00	Field Blank	Metals	Chromium	1	U	ug/L	1	4
1/28/2008 12:00	Field Blank	Metals	Nickel	0.25	U	ug/L	0.25	1
1/28/2008 12:00	Field Blank	Metals	Magnesium	0.04	U	mg/L	0.04	0.16
1/28/2008 12:00	Field Blank	Metals	Silver	0.025	U	ug/L	0.025	0.1
1/28/2008 12:00	Field Blank	Metals	Arsenic	0.5	U	ug/L	0.5	2
1/28/2008 12:00	Field Blank	Metals	Calcium	0.075	U	mg/L	0.075	0.3
1/28/2008 12:00	Field Blank	Metals	Lead	0.2	U	ug/L	0.2	0.8
1/28/2008 12:00	Field Blank	Metals	Iron	30	U	ug/L	30	120
1/28/2008 12:00	Field Blank	Nutrients	NO2NO3-N	0.004	U	mg N/L	0.004	0.01
1/28/2008 12:00	Field Blank	Nutrients	Total-P	0.02	U	mg P/L	0.02	0.06
1/28/2008 12:00	Field Blank	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
1/28/2008 12:00	Field Blank	Nutrients	Kjeldahl Nitrogen	0.08	U	mg N/L	0.08	0.2
1/28/2008 12:00	Field Blank	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
1/28/2008 12:00	Field Blank	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
1/28/2008 12:00	Field Blank	Pesticides	Ametryn	0.049	U	ug/L	0.049	0.2

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
1/28/2008 12:00	Field Blank	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	1
1/28/2008 12:00	Field Blank	Pesticides	Metolachlor	0.49	U	ug/L	0.49	2
1/28/2008 12:00	Field Blank	Pesticides	Butylate	0.2	U	ug/L	0.2	0.8
1/28/2008 12:00	Field Blank	Pesticides	Ethoprop	0.098	U	ug/L	0.098	0.39
1/28/2008 12:00	Field Blank	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8
1/28/2008 12:00	Field Blank	Pesticides	Ethion	0.049	U	ug/L	0.049	0.2
1/28/2008 12:00	Field Blank	Pesticides	Azinphos Methyl	0.2	U	ug/L	0.2	0.8
1/28/2008 12:00	Field Blank	Pesticides	Chlorpyrifos Methyl	0.098	U	ug/L	0.098	0.39
1/28/2008 12:00	Field Blank	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6
1/28/2008 12:00	Field Blank	Pesticides	Phorate	0.049	U	ug/L	0.049	0.2
1/28/2008 12:00	Field Blank	Pesticides	Naled	0.78	U	ug/L	0.78	3.1
1/28/2008 12:00	Field Blank	Pesticides	Hexazinone	0.098	U	ug/L	0.098	0.39
1/28/2008 12:00	Field Blank	Pesticides	Alachlor	0.59	U	ug/L	0.59	2.4
1/28/2008 12:00	Field Blank	Pesticides	Parathion Methyl	0.098	U	ug/L	0.098	0.39
1/28/2008 12:00	Field Blank	Pesticides	Atrazine	0.049	U	ug/L	0.049	0.2
1/28/2008 12:00	Field Blank	Pesticides	Simazine	0.049	U	ug/L	0.049	0.2
1/28/2008 12:00	Field Blank	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
1/28/2008 12:00	Field Blank	Pesticides	Fonofos	0.098	U	ug/L	0.098	0.39
1/28/2008 12:00	Field Blank	Pesticides	Diazinon	0.049	U	ug/L	0.049	0.2
1/28/2008 12:00	Field Blank	Pesticides	Bromacil	0.2	U	ug/L	0.2	0.8
1/28/2008 12:00	Field Blank	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
1/28/2008 12:00	Field Blank	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.8
1/28/2008 12:00	Field Blank	Pesticides	Metribuzin	0.098	U	ug/L	0.098	0.39
1/28/2008 12:00	Field Blank	Pesticides	Chlorpyrifos Ethyl	0.049	U	ug/L	0.049	0.2
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Butyl benzyl phthalate	4.9	U	ug/L	4.9	20
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Di-n-butyl phthalate	4.9	U	ug/L	4.9	20
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Diethyl phthalate	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Dimethyl phthalate	9.8	UJ	ug/L	9.8	39
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Fluoranthene	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Hexachloroethane	2.9	U	ug/L	2.9	12
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Phenol	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	2-Chlorophenol	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2	U	ug/L	2	7.8
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Acenaphthene	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Chrysene	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Endosulfan II	3.9	U	ug/L	3.9	16
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Heptachlor	1.5	U	ug/L	1.5	5.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.98	U	ug/L	0.98	3.9

Appendix E. (continued)

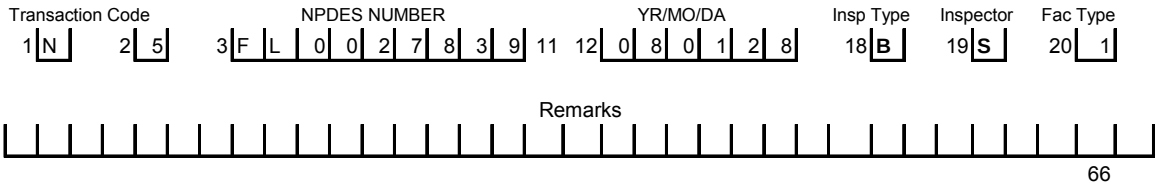
Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	4,4'-DDE	1.5	U	ug/L	1.5	5.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2	U	ug/L	2	7.8
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9	U	ug/L	2.9	12
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Pyrene	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	alpha-BHC	1.5	U	ug/L	1.5	5.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	gamma-BHC	1.5	U	ug/L	1.5	5.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9	U	ug/L	2.9	12
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Endrin aldehyde	3.9	U	ug/L	3.9	16
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	beta-BHC	1.5	U	ug/L	1.5	5.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	59
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	15	U	ug/L	15	59
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Di-n-octyl phthalate	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Endrin	1.5	U	ug/L	1.5	5.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Hexachlorobenzene	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Isophorone	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Phenanthrene	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	2,4-Dimethylphenol	9.8	U	ug/L	9.8	39
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	4,4'-DDT	1.5	UJ	ug/L	1.5	5.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Aldrin	1.5	U	ug/L	1.5	5.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Dieldrin	1.5	U	ug/L	1.5	5.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Endosulfan I	3.9	U	ug/L	3.9	16
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Endosulfan sulfate	1.5	U	ug/L	1.5	5.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Hexachlorobutadiene	2.9	U	ug/L	2.9	12
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	2	U	ug/L	2	7.8
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Nitrobenzene	2	U	ug/L	2	7.8
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	2-Chloronaphthalene	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	39	U	ug/L	39	160
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9	U	ug/L	2.9	12

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Fluorene	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Heptachlor epoxide	1.5	U	ug/L	1.5	5.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9	U	ug/L	2.9	12
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	2,4-Dichlorophenol	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	2,4-Dinitrophenol	15	U	ug/L	15	59
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	2-Nitrophenol	0.98	UJ	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Anthracene	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Naphthalene	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Pentachlorophenol	2.9	U	ug/L	2.9	12
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	delta-BHC	1.5	U	ug/L	1.5	5.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	4,4'-DDD	1.5	U	ug/L	1.5	5.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Acenaphthylene	0.98	U	ug/L	0.98	3.9
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Benzidine	98	U	ug/L	98	390
1/28/2008 12:00	Field Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.98	U	ug/L	0.98	3.9

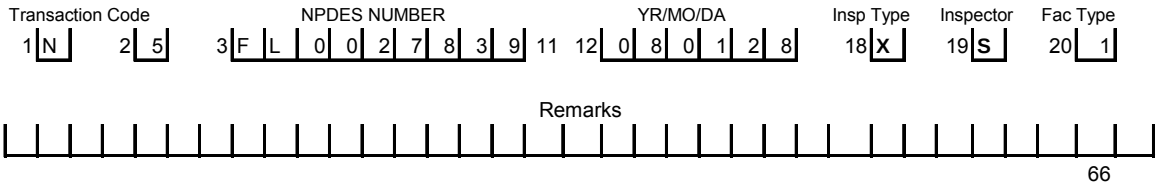
The Bioassay of City of Monticello WWTP, effluent sampled on January 28, January 30, and February 1, 2008. NPDES #FL0027839.

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



The Priority Pollutants Analysis of City of Monticello WWTP, effluent sampled on January 28, 2008. NPDES #FL0027839.

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



Biological Analyses of City of Monticello WWTP, effluent sampled on January 28, 2008. NPDES #FL0027839.

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

