

Effluent Quality Assessment

Town of Century Wastewater Treatment Facility

Escambia County

NPDES #FL0032468

Sampled May 23-24, 2010

September 2010

Biology Section
Bureau of Laboratories
Division of Environmental Assessment and Restoration

Quality Manual No. 870346G
NELAC Certification No. E31780

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Town of Century Wastewater Treatment Facility, Jefferson Street, Century, Escambia County, Florida, 32535. NPDES #FL0032468. Effluent grab samples for bioassay and chemical analyses for this facility were collected on May 23-24, 2010.

Introduction

Town of Century WWTF is a municipal secondary domestic wastewater treatment facility which uses conventional extended aeration and chlorination to treat domestic wastewater. (See Appendix F for detailed facility information provided by Kim Allen of FDEP Northwest District.)

Methods

Samples were collected from the EFF-01 NPDES sampling point for Outfall D-001 by Nathan Mulkey and Rick Abad (FDEP Northwest District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling. All DEP SOPs are available on the web at: http://www.floridadep.org/labs/bars/sas/qa/sops.htm.

See Appendix A for the completed chain of custody form.

The 96-hour acute screening toxicity tests and algal growth potential test were performed following internal DEP SOPs TA07_01, TA07_02, and TA08_01 through TA08_09. All internal DEP SOPs are available on the web at: http://www.floridadep.org/labs/cgi-bin/sop/biosop.asp.

Results and Discussion

- **Toxicity Test Results**
  Tests were performed May 25 - 29, 2010.

Sample # 1	
Ceriodaphnia dubia 96-hour acute screening 4/24 bioassay –	LC_{50} > 100%, 0%* mortality in 100% sample at 96 hours
Cyprinella leedsi 96-hour acute screening 4/24 bioassay –	LC_{50} > 100%, 0%* mortality in 100% sample at 96 hours
Sample # 2	
Ceriodaphnia dubia 96-hour acute screening 4/24 bioassay –	LC_{50} > 100%, 5%* mortality in 100% sample at 96 hours
Cyprinella leedsi 96-hour acute screening 4/24 bioassay –	LC_{50} > 100%, 0%* mortality in 100% sample at 96 hours
Sample # 3	
Ceriodaphnia dubia 96-hour acute screening 4/24 bioassay –	LC_{50} > 100%, 0%* mortality in 100% sample at 96 hours
Cyprinella leedsi 96-hour acute screening 4/24 bioassay –	LC_{50} > 100%, 0%* mortality in 100% sample at 96 hours
Sample # 4	
Ceriodaphnia dubia 96-hour acute screening 4/24 bioassay –	LC_{50} > 100%, 0%* mortality in 100% sample at 96 hours
Cyprinella leedsi 96-hour acute screening 4/24 bioassay –	LC_{50} > 100%, 0%* mortality in 100% sample at 96 hours

The bioassay samples were not acutely toxic to the test organisms.

*NOTE: In a 96-hour acute screening test of 100% effluent, mortality of <20% provides confidence that the effluent meets the acute toxicity criterion of Florida's Surface Water Quality Standards (Rule 62-302.500 (1) (a) 4, F.A.C.). Mortality between 20-50% indicates low to moderate levels of toxicity, and further action may be required. Mortality of >50% indicates that the effluent fails to meet the minimum requirement to discharge to waters of the state (Rule 62-4.244(3) (a), F.A.C.).

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

- **Algal Growth Potential**
  The effluent Algal Growth Potential (AGP) was 137 A (A - Value reported is the mean of two or more determinations) mg dry wt/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. Raschke and Schultz (1987) determined that AGP values above 5.0 mg dry weight/L represent a "problem" threshold for fresh receiving waters, implying nutrient enrichment. The analytical chemistry suggests that the effluent is nitrogen-limited. The predicted AGP based on inorganic nitrogen concentrations was 79.3 (±20%) mg dry wt/L (Table 1; Miller et al. 1978).

  See Table 1 for AGP results.

- **Chemistry Results**
  Total residual chlorine was not detected in the bioassay samples in the laboratory. Total ammonia concentrations detected in bioassay samples 1-3 in the laboratory were, respectively, 0.222 mg N/L, 0.414 mg N/L, and 0.099 mg N/L. Total ammonia was not detected in bioassay sample #4. The total ammonia concentration in the grab sample collected and preserved for chemical analysis was 0.087 mg N/L. Based on the pH, salinity, and temperature of the bioassay samples as measured in the laboratory and the preserved sample when collected, the calculated unionized ammonia concentrations were < 0.02 mg/L in each sample.

  Nickel and zinc were detected in the effluent at levels that comply with Class III fresh water quality criteria (62-302.530, F.A.C.). Iron was detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL). Copper (12.0 µg/L; limit ≤5.1 µg/L, (Limit is calculated based on hardness) 62-302.500 (23), F.AC.) exceeded the Class III criterion for fresh water.

  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 B for bioassay lab equipment.

Conclusion

The effluent samples collected from the EFF-01 NPDES sampling point for Outfall D-001 for this facility on May 23-24, 2010, were not acutely toxic to either test species during the 96-hour acute screening bioassays. The effluent AGP result was greater than the "problem" threshold for fresh receiving waters, which suggests that nutrient enrichment may be an issue. Effluent copper (12.0 µg/L; limit ≤5.1 µg/L, 62-302.500 (23), F.AC.) exceeded the criterion for copper for Class III fresh water. Other effluent water quality samples did not exceed applicable water quality standards or effluent limits.

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 collected from the Town of Century Wastewater Treatment Facility on May 24, 2010.

Town Of Century WWTF NPDES# FL0032468					
Location	AGP (measured)	Predicted AGP (TSIN) ± 20%	Predicted AGP (TN) ± 20%	Inorganic N:P ratio	Total N:P ratio
EFF-1	137.0 A	79.3 ± 15.9	104.9 ± 21.0	0.9	0.9

A - Value reported is the mean of two or more determinations

Table 2. Effluent limits, Class III Freshwater Criteria and chemical and microbiological data for samples collected from the Town of Century Wastewater Treatment Facility on May 24, 2010.

Town Of Century WWTF NPDES# FL0032468	Class III Criteria	Effluent Limits	EFF-1	
Metals (µg/L unless otherwise noted)				
Aluminum	-	-	60	U
Arsenic	≤ 50	-	0.25	U
Cadmium	≤ 0.2 b	-	0.09	U
Calcium (mg/L)	-	-	16.7	
Chromium-III	≤ 48.1 b	-	0.3	U
Copper	≤ 5.1 b	-	12	
Iron	≤ 1,000	-	36	I
Lead	≤ 1.3 b	-	0.92	U
Magnesium (mg/L)	-	-	1.79	
Nickel	≤ 28.6 b	-	1.25	
Selenium	≤ 5.0	-	0.2	U
Silver	≤ 0.07	-	0.025	U
Zinc	≤ 65.5 b	-	39	
Nutrients (mg/L)				
Ortho-phosphate	-	-	2.3	
Total Phosphorus	-	-	3	
Total Ammonia	-	-	0.087	
Un-ionized Ammonia	≤ 0.02 s	-	≤ 0.02	c
Nitrate and Nitrite	-	-	2	
Total Kjeldahl Nitrogen	-	-	0.76	
Organic Nitrogen	-	-	0.673	c
Total Nitrogen	-	≤ 6.0 s	2.76	c
General Physical and Chemical Parameters				
Dissolved Oxygen (mg/L)	≥ 5.0	-	8.3	
pH (SU)	6.0 - 8.5	6.0 - 8.5	7.1	
Conductivity (µmhos/cm)	≤ 1,275	-	299	
Temperature (°C)	-	-	27.3	
Salinity	-	-	< 0.14	c
Total Residual Chlorine (mg/L)	≤ 0.01	≤ 0.01	≤ 0.03	U£
Chlorophyll *a* (µg/L) - Corrected	-	-	1.1	I
Phaeophytin (µg/L)	-	-	0.4	U
Total Suspended Solids (mg/L)	-	≤ 60.0 s	4	I
Color (pt-Co)	-	-	10	
CBOD, 5 day (mg/L), N - inhibited	-	≤ 60.0 s	0.89	IJ
Chloride (mg/L)	-	-	42	A
Fluoride (mg/L)	≤ 10.0	-	0.05	U
Sulfate (mg/L)	-	-	25	A
Flow (MGD)	-	0.45 m	0.41	m
Hardness (mg $CaCO_3$)	-	-	49.07	c
Microbiology (Number of colony forming units/100ml)				
Fecal Coliforms @	≤ 400s #	Report	11	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 daily flow
s - Single sample
A - Value reported is the mean of two or more determinations
B - Results based on colony counts outside the acceptance range
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J - Estimated value
U - Material analyzed for but not detected; value reported is the method detection limit
@ - Fecal coliform analysis performed by University of West Florida
# - If 10 or fewer samples are taken within a month, the single sample limit is 400 CFU (62-302.530(6), F.A.C.)
£ - Measured in Central Labs and entered into Tox sheets

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2010-05-24-22
Town of Century FYI3

Requester: Cari Butler
Field Report Prepared By: N. Mulloy

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

Collected By: Nathan Mulloy / Rick Abel
Send Final Report To: Toni Edwards

Sampling Agency: NWFDEP

Lab ID *	Location			Comp / Grab	Collection (begin) Date	Time	Eastern Central	Collection (end) Date	Time	Eastern Central	Bottle Group(s)**
	Town of Century WWTF			☐ Comp ☑ Grab	5/23/10	1700	Central				
	Field ID: TOX 1	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)**
	Town of Century WWTF			☐ Comp ☑ Grab	5/23/10	2306	Central				
	Field ID: TOX 2	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)**
				☐ Comp ☐ Grab							
	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)**
				☐ Comp ☐ Grab							
	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
	5/24/10	FedEx		5/25/10 0920				

* 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-2010-05-24-22
Town of Century FYI3

Requester: Cari Butler
Field Report Prepared By: N. Milkey

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

Collected By: Nathan Milkey / Rick Alexander
Send Final Report To: Toni Edwards
Sampling Agency: NWFDEP

Lab ID *	Location	Collection (begin) Eastern Central	Collection (end) Eastern Central	Bottle Group(s)**
	Town of Century WWTF Field ID: Blank	☐ Comp ☐ Grab Date 5/24/10 Time 1100 (Central)	Date Time	
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number
				Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number
	Latitude o ' "	Longitude o ' "		Comments		

Lab ID *	Location	Collection (begin) Eastern Central	Collection (end) Eastern Central	Bottle Group(s)**
	Town of Century WWTF Field ID: EFF-1	☐ Comp ☑ Grab Date 5/24/10 Time 1040 (Central)	Date Time	
	Matrix (include type e.g. Salt, (Fresh) etc)	Temp (C) 27.26	pH 7.09	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L) 8.32	Storet Station Number
				Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☑ Sp Conductance (umho/cm) 299	NPDES Number
	Latitude o ' "	Longitude o ' "		Comments: Effluent		

Lab ID *	Location	Collection (begin) Eastern Central	Collection (end) Eastern Central	Bottle Group(s)**
	Town of Century WWTF Field ID: TOX 14	☑ Comp ☑ Grab Date 5/24/10 Time 1105 (Central)	Date Time	
	Matrix (include type e.g. Salt, (Fresh) etc)	Temp (C)	pH	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number
				Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number
	Latitude o ' "	Longitude o ' "		Comments		

Lab ID *	Location	Collection (begin) Eastern Central	Collection (end) Eastern Central	Bottle Group(s)**
	Town of Century WWTF Field ID: TOX 3	☐ Comp ☑ Grab Date 5/24/10 Time 0507 (Central)	Date Time	
	Matrix (include type e.g. Salt, (Fresh) etc)	Temp (C)	pH	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number
				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
[signature]	5/24/10	FedEx	[signature]	5/25/10 0900	8 Bsy		BA lexander 5-25-10 @ 10:20	

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

FDEP Biology Laboratory - Acute Screen 4/24 Bioassay Bench Sheets

Facility: Town of Century WWTP

Address: Jefferson Street

City: Century County: Escambia

Contact/District: Kim Allen / NWD

NPDES Permit #: FL0032468

LIMS Job #: TLH-2010-5-25-55 LIMS Sample #: 1273489

Lims Data Entry: 6-15-10 MF Data Entry Verification: 6/16/10 BA

Sample Collection: Date: 5-23-10 Time: 1802

Hold Time Start: Date: 5-24-10 Time: 1205

Sample: 1 of 4

Comments:

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.

Light Intensity : 50 - 100 ft. candles.

Photoperiod : 16 hours light 8 hours dark.

Test 1 validation: Test 1: SOP TA 07_01

Control survival ≥90%: (Yes) No

Temperature Range ≤3°C: (Yes) No

Test 2 validation: Test 2: SOP TA 07_02

Control survival ≥90%: (Yes) No

Temperature Range ≤3°C: (Yes) No

(√one)

Test 1 incubated in: [✓] Incubator #: 2 [ ] Waterbath #:_____

Test 2 incubated in: [✓] Incubator #: 2 [ ] Waterbath #:_____

Initial sample handling:

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

Aeration : yes (no) Initial DO: _____mg/L Final DO: _____mg/L Duration: _____minutes Rate: ~ _____bubbles/min

Salinity adjusted (Test 1): yes (no) Initial Salinity: _____ Final Salinity: _____ Salts Hypersaline brine

Salinity adjusted (Test 2): yes (no) Initial Salinity: _____ Final Salinity: _____ Salts Hypersaline brine

Dechlorination: yes (no) _____mL of 0.025N Sodium Thiosulfate per liter of sample. Final TRC: _____

Sample Validation:

Temperature: Shipped ≤6°C (Yes) No ----- If 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: (If used)

Incubator # 2 min 24.5 max 26.4 mean 25.5

Incubator # ____ min._____ max._____ mean_____

Waterbath # ____ min._____ max._____ mean_____

Room B246 min 25.2 max 25.8 mean 25.5

Investigators' Signatures:

James Danos

Bucci Alexander

Kim M Spencer

Marshall Faircloth

Stephanie Miller

REVIEWER

Water Quality Parameters	20% DMW	Well Water	Moderately Hard Water	Salt Water ASW NSW Test 1	Salt Water ASW NSW Test 2	Other:	Original Sample	Measured by	Verified by
Batch #	5-24-10	5-24-10							
Field Total Residual Cl_2 (mg/L):	N/A	N/A	N/A	N/A	N/A		Not measured		MF
Lab Total Residual Cl_2 (mg/L):	<0.03	<0.03					<0.03	KMS	MF
Alkalinity (mg/L as $CaCO_3$):	91	154					61	BA	MF
Hardness (mg/L as $CaCO_3$):	84	151					67	BA	MF
Total Ammonia (mg/L as N):	<0.017	<0.017					0.222	MF	BA
Conductivity: ~~µmhos~~ mmhos	180	321					314	BA	MF
Salinity (ppth):	—	—					0.08	BA	MF

Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1273489 Test #: 14 SOP#:TA 07 01 Test Started: Date 5 25.10 Time: 13 15

Organism/Batch/Age: C.dubia /15.10/<24hrs Test Ended: Date 5-29-10 Time: 1010

Chamber/Test Volume: 30 / 20 ml Diluent/ Batch: DMW / 5.11.10 Test Duration: 48 hr 96 hr

Food/Batch: ☑ YCT 10.30.09 ☑ P.sub 12.23.09

☐ Artemia: 0hr____ 24hr____ 48hr____ 72hr____ Artemia Lot#____

Feeding: ☑ Prior to Test ☑ Prior to Renewal ☑ 0 hr ☐ 24 hr ☑ 48 hr ☐ 72 hr

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
CTRL	A	A1	5	5	5	5	5	5
	B	A2	5	5	5	5	5	5
	C	A3	5	5	5	5	5	5
	D	A4	5	5	5	5	5	5
100%	A	A5	5	5	5	5	5	5
	B	A6	5	5	5	5	5	5
	C	A7	5	5	5	5	5	5
	D	A8	5	5	5	5	5	5
			MF	BA	VMT	VMT	BA	MF

Loaded/Verified by: BA / MF Checked by:

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

Test Results:

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

% mortality in 100% sample: 0% LC50: >100%

If Calculated: 95% CI_____ Method_____

Comments:

V 2.3 7/15/2008

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 #: 1273489 Test #: 1/4 SOP#:TA 07 02 Test Started: Date 5-25-10 Time: 1300

Organism/Batch/Age: C. leedsi / 5-25-10 / 8 days Test Ended: Date 5-29-10 Time: 1010

Chamber/Test Volume: 1000 / 500 ml Diluent/ Batch: well / 5-24-10 Test Duration: 48 hr (96 hr)

Food/Batch: ☐ YCT ☐ P.sub

☑ Artemia: 0hr 84-10 24hr 48hr 85-10 72hr Artemia Lot# 23613

Feeding: ☑ Prior to Test ☑ Prior to Renewal ☑ 0 hr ☐ 24 hr ☑ 48 hr ☐ 72 hr

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
CTRL	A	F1	5	5	5	5	5	5
	B	F2	5	5	5	5	5	5
	C	F3	5	5	5	5	5	5
	D	F4	5	5	5	5	5	5
100%	A	F5	5	5	5	5	5	5
	B	F6	5	5	5	5	5	5
	C	F7	5	5	5	5	5	5
	D	F8	5	5	5	5	5	5
Loaded/Verified by: TO / kms		Checked by:	kms	kms	kms	BA	JD	MF

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: 0% LC50: >100%

If Calculated: 95% CI_____ Method_____ V 2.3 7/15/2008

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

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FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

IMS Sample # : 1273489 Test #: 1 of 2

EST SOP #: TA07_01 Test Species: ☑ *Ceriodaphnia dubia* ☐ *Cyprinella leedsi* ☐ *Pimephales promelas*

est aerated: yes (no) (circle one) Check 1: ☐ *Americamysis bahia* ☐ *Menidia beryllina* ☐ Other:

Concentration Ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		A	M		A
pH (S.U.)	7.9		8.1	7.9		8.1
Temperature °C	24.1		24.0	24.0		24.2
Dissolved Oxygen mg/L aerate if < 4	7.8		7.8	7.9		7.3
Conductivity (µmhos) mmhos	180		200	178		205
Salinity ppth						
(initials) Measured by:	BA	-	BA	BA	-	MF
(initials) Recorded by:	BA	-	BA	BA	-	MF

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		A	M		A
pH (S.U.)	7.3		8.1	7.4		8.0
Temperature °C	25.9		24.0	24.8		24.0
Dissolved Oxygen mg/L aerate if < 4	7.3		7.9	8.7		7.4
Conductivity (µmhos) mmhos	307		329	315		340
Salinity ppth				~~BA~~		
(initials) Measured by:	BA	-	BA	BA	-	MF
(initials) Recorded by:	BA	-	BA	BA	-	MF

Comments:

Salinity only needs measuring if saltwater.

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 aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(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 aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

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FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 1273489 Test #: 2 of 2

TEST SOP #: TA07_02 Test Species: ☐ Ceriodaphnia dubia ☒ Cyprinella leedsi ☐ Pimephales promelas

Test aerated: yes (no) (circle one) Check 1: ☐ Americamysis bahia ☐ Menidia beryllina ☐ Other:_____

Concentration Ctrl 5+1 SW	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C	C	D	A
pH (S.U.)	8.0	8.2	8.4	8.2	8.2	8.3
Temperature °C	25.9	24.2	25.8	25.7	25.9	25.1
Dissolved Oxygen mg/L aerate if < 4	8.0	8.0	7.8	7.6	7.0	7.0
Conductivity (µmhos) mmhos	321	317	307	299	286	289
Salinity ppth	—	—	—	—	—	
(initials) Measured by:	KMS	KMS	KMS	KMS	JS	MF
(initials) Recorded by:	KMS	KMS	KMS	KMS	JS	MF

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C	C	D	A
pH (S.U.)	7.4	7.6	7.8	7.4	7.7	7.8
Temperature °C	25.9	24.6	25.9	25.5	25.7	24.6
Dissolved Oxygen mg/L aerate if < 4	7.4	7.9	7.7	8.2	7.1	6.9
Conductivity (µmhos) mmhos	333	340	340	334	324	337
Salinity ppth	—	—	—	—	—	
(initials) Measured by:	KMS	KMS	KMS	KMS	JS	MF
(initials) Recorded by:	KMS	KMS	KMS	KMS	JS	MF

Comments:

Salinity only needs measuring if saltwater.

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 aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(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 aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

FDEP Biology Laboratory - Acute Screen 4/24 Bioassay Bench Sheets

Facility: Town of Century NWTF

Address: Jefferson St.

City: Century County: Escambia

Contact/District: Kim Allen / NWD

NPDES Permit #: FL 0032468

LIMS Job #: TLH-2010-05-25.59 LIMS Sample #: 1273490

Lims Data Entry: 6-15-10 MF Data Entry Verification: 6.16.10 BA

Sample Collection: Date: 5-24-10 Time: 0605 (eastern)

Hold Time Start: Date: 5-24-10 Time: 1205

Sample: 2 of 4

Comments:

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

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

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

(√one)
Test 1 incubated in: ☑ Incubator #: 2 ☐ Waterbath #:_____
Test 2 incubated in: ☑ Incubator #: 2 ☐ Waterbath #:_____

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

Sample Validation:
Temperature: Shipped ≤6°C (Yes) No — If 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)

Investigators' Signatures
Brad Alexander
Kim M Spencer
Maubell Fairchild
James Danish

Liz Miller
REVIEWER

Water Quality Parameters	Original Sample	Other	Measured by	Verified by
Field Total Residual Cl_2 (mg/L):	Not measured			MF
Lab Total Residual Cl_2 (mg/L):	<0.03		KMS	MF
Alkalinity (mg/L as $CaCO_3$):	71		BA	MF
Hardness (mg/L as $CaCO_3$):	71		BA	MF
Total Ammonia (mg/L as N):	0.414		MF	BA
Conductivity (µmhos) mmhos	312		BA	MF
Salinity (ppth):	0.08		BA	MF

V 2.2 7/7/08

Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1273490 Test #: 224 (BA) SOP#:TA 07 01 Test Started: Date 5.25.10 Time: 13 25

Organism/Batch/Age: C.dubia / 1510 / <24hrs Test Ended: Date 5-29-10 Time: 1020

Chamber/Test Volume: 30 / 20 ml Diluent/ Batch: 5.11.10 / DMW Test Duration: 48 hr (96 hr)

Food/Batch: [x] YCT 10.30.09 [x] P.sub 2.23.09

[ ] Artemia: 0hr_____ 24hr_____ 48hr_____ 72hr_____ Artemia Lot#_____

Feeding: [x] Prior to Test [x] Prior to Renewal [x] 0 hr [ ] 24 hr [x] 48 hr [ ] 72 hr

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Ctrl	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
100%	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	(A) 4 1D	4	4	4
Loaded/Verified by: BA / MF	Checked by:		BA	BA	Kms by MF	Kms by MF	BA	ML

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

Comments: (A) ERROR: SQUISHED A ~~DUB~~ C.dubia BA

Test Results:

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

% mortality in 100% sample: ~~5%~~ 0% LC50: >100%

If Calculated: 95% CI_________ Method__________

V 2.3 7/15/2008

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 #: 1273490 Test #: 2/4 SOP#:TA 07 02 Test Started: Date 5-25-10 Time: 1315
Organism/Batch/Age: C. leedsi / 5-25-10 / 8 days Test Ended: Date 5-29-10 Time: 1020
Chamber/Test Volume: 1000 / 500 ml Diluent/ Batch: Well / 5-24-10 Test Duration: 48 hr (96 hr)
Food/Batch: [ ] YCT ____ [ ] P.sub ____
[✓] Artemia: 0hr 84-10 24hr ____ 48hr 85-10 72hr ____ Artemia Lot# 23613
Feeding: [✓] Prior to Test [✓] Prior to Renewal [/] 0 hr [ ] 24 hr [/] 48 hr [ ] 72 hr

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
CTRL	A	F9	5	5	5	5	5	5
	B	F10	5	5	5	5	5	5
	C	F11	5	5	5	5	5	5
	D	F12	5	5	5	5	5	5
100%	A	F13	5	5	5	5	5	5
	B	F14	5	5	5	5	5	5
	C	F15	5	5	5	5	5	5
	D	F16	5	5	5	5	5	5
Loaded/Verified by: JD / kmo		Checked by:	kmo	kmo	kmo	DA	JD	MF

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: 0% LC50: >100%

If Calculated: 95% CI ____ Method ____

V 2.3 7/15/2008

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

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FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

IMS Sample # : 1273490 Test #: 1 of 2

EST SOP #: TA07 01 Test Species: [X] *Ceriodaphnia dubia* [ ] *Cyprinella leedsi* [ ] *Pimephales promelas*

est aerated: yes (no) (circle one) Check 1: [ ] *Americamysis bahia* [ ] *Menidia beryllina* [ ] Other:_____

Concentration ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		A	M		A
pH (S.U.)	8.0		8.1	8.0		8.2
Temperature °C	24.3		24.0	24.0		24.4
Dissolved Oxygen mg/L aerate if < 4	7.7		7.7	7.4		7.6
Conductivity (µmhos) mmhos	180		205	179		215
Salinity ppth						
(initials) Measured by:	BA	-	BA	BA	-	MF
(initials) Recorded by:	BA	-	BA	BA	-	MF

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		A	M		A
pH (S.U.)	7.4		8.0	7.4		8.0
Temperature °C	26.0		24.0	24.8		24.3
Dissolved Oxygen mg/L aerate if < 4	8.4		8.3	7.9		7.6
Conductivity (µmhos) mmhos	309		373	317		395
Salinity ppth						
(initials) Measured by:	BA	-	BA	BA	-	MF
(initials) Recorded by:	BA	-	BA	BA	-	MF

Comments:

Salinity only needs measuring if saltwater.

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 aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(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 aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

072

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FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 1273490 Test #: 2 of 2

TEST SOP #: TA07_02 Test Species: ☐ *Ceriodaphnia dubia* ☒ *Cyprinella leedsi* ☐ *Pimephales promelas*

Test aerated: yes (no) (circle one) Check 1: ☐ *Americamysis bahia* ☐ *Menidia beryllina* ☐ Other:_____

Concentration Ctrl Lab	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C	C	D	A
pH (S.U.)	8.0	8.2	8.3	8.2	8.2	8.3
Temperature °C	25.4	24.4	25.6	25.5	24.9	24.7
Dissolved Oxygen mg/L aerate if < 4	8.0	8.0	8.1	7.4	7.3	7.0
Conductivity (µmhos) mmhos	312	303	296	302	284	286
Salinity ppth	—	—	—	—	—	—
(initials) Measured by:	KMR	KMR	KMR	KMR	JS	MF
(initials) Recorded by:	KMR	KMR	KMR	KMR	JS	MF

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C	C	D	A
pH (S.U.)	7.4	7.7	7.7	7.4	7.6	7.7
Temperature °C	25.9	24.6	25.7	25.5	25.1	24.8
Dissolved Oxygen mg/L aerate if < 4	8.4	8.1	7.3	8.3	7.3	7.1
Conductivity (µmhos) mmhos	328	330	330	330	324	328
Salinity ppth	—	—	—	—	—	
(initials) Measured by:	KMR	KMR	KMR	KMR	JS	MF
(initials) Recorded by:	KMR	KMR	KMR	KMR	JS	MF

Comments:

Salinity only needs measuring if saltwater.

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 aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(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 aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

FDEP Biology Laboratory - Acute Screen 4/24 Bioassay Bench Sheets

Facility: Town of Century WWTF

Address: Jefferson Street

City: Century County: Escambia

Contact/District: Kim Allen / NWD

NPDES Permit #: FL0032468

LIMS Job #: TLH-2010-05-25-59 LIMS Sample #: 1273488

Lims Data Entry: 6-15-10 MF Data Entry Verification: BJ 6.16.10

Sample Collection: Date: 5-24-10 Time: 0607

Hold Time Start: Date: 5-24-10 Time: 1205

Sample: 3 of 4

Comments:

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

Test 1 validation:
Control survival ≥90%: (Yes) No
Temperature Range ≤3°C: (Yes) No
Test 1: SOP TA 07_01

Test 2 validation:
Control survival ≥90%: (Yes) No
Temperature Range ≤3°C: (Yes) No
Test 2: SOP TA 07_02

(√one)
Test 1 incubated in: ☑ Incubator #: 2 ☐ Waterbath #:
Test 2 incubated in: ☑ Incubator #: 2 ☐ Waterbath #:

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

Sample Validation:
Temperature: Shipped ≤6°C (Yes) No — If 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)

Investigators' Signatures
Bree Alexander
MM/MSpencer
Marshall Fairbanks
James Daniels

REVIEWER

Water Quality Parameters	Original Sample	Other	Measured by	Verified by
Field Total Residual Cl_2 (mg/L):	Not measured			BF
Lab Total Residual Cl_2 (mg/L):	20.03		KMS	MF
Alkalinity (mg/L as $CaCO_3$):	39		BA	MF
Hardness (mg/L as $CaCO_3$):	52		BA	MF
Total Ammonia (mg/L as N):	0.0986		MF	BA
Conductivity: (µmhos) mmhos	317		BA	MF
Salinity (ppth):	0.08		BA	MF

V 2.2 7/8/08

Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1273488 Test #: 3/4 SOP#:TA 07 01 Test Started: Date 5-25-10 Time: 13:35

Organism/Batch/Age: C. dubia/15.10/<24hr Test Ended: Date 5-29-10 Time: 1040

Chamber/Test Volume: 30 / 20 ml Diluent/ Batch: DMW / 5.11.10 Test Duration: 48 hr (96 hr)

Food/Batch: [✓] YCT 10.30.09 [✓] P.sub 12.23.09

[ ] Artemia: 0hr____ 24hr____ 48hr____ 72hr____ Artemia Lot#____

Feeding: [✓] Prior to Test [✓] Prior to Renewal [✓] 0 hr [ ] 24 hr [✓] 48 hr [ ] 72 hr

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Ctrl	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
100%	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
Loaded/Verified by: BS / MF		Checked by:	BA	BA	MMS	MMS	BA	MF

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: Ø LC50: > 100%

If Calculated: 95% CI________ Method________

V 2.3 7/15/2008

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 #: 1273488 Test #: 3/4 SOP#:TA 07 02 Test Started: Date 5-25-10 Time: 1330

Organism/Batch/Age: C. leedsi / 5-25-10 / 8 days Test Ended: Date 5-29-10 Time: 1040

Chamber/Test Volume: 1000 / 500 ml Diluent/ Batch: well / 5-24-10 Test Duration: 48 hr (96 hr)

Food/Batch: ☐ YCT ☐ P.sub

☑ Artemia: 0hr 8-4-10 24hr ___ 48hr 8-5-10 72hr ___ Artemia Lot# 23613

Feeding: ☑ Prior to Test ☑ Prior to Renewal ☑ 0 hr ☐ 24 hr ☑ 48 hr ☐ 72 hr

Concentration	Replicate	Chamber #	Test Hour: 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
CTRL	A	F17	5	5	5	5	5	5
	B	F18	5	5	5	5	5	5
	C	F19	5	5	5	5	5	5
	D	F20	5	5	5	5	5	5
100%	A	F21	5	5	5	5	5	5
	B	F22	5	5	5	5	5	5
	C	F23	5	5	5	5	5	5
	D	F24	5	5	5	5	5	5

Loaded/Verified by: JD / kms Checked by: kms | kms | kms | BA | JD | MF

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: Ø LC50: >100%

If Calculated: 95% CI ______ Method ______

V 2.3 7/15/2008

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

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FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

IMS Sample # : 1273488 Test #: 1 of 2

EST SOP #: TA07 01 Test Species: ☒ *Ceriodaphnia dubia* ☐ *Cyprinella leedsi* ☐ *Pimephales promelas*

est aerated: yes (no) (circle one) Check 1: ☐ *Americamysis bahia* ☐ *Menidia beryllina* ☐ Other:

Concentration: ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		A	M		A
pH (S.U.)	8.1		8.2	8.0		8.2
Temperature °C	24.2		24.0	24.0		24.2
Dissolved Oxygen mg/L aerate if < 4	7.7		BA 7.3 ~~7.5~~	1.8		7.8
Conductivity (µmhos) mmhos	181		207	179		212
Salinity ppth						
(initials) Measured by:	BA	—	BA	BA	—	MF
(initials) Recorded by:	BA	—	BA	BA	—	MF

Comments:

Concentration: 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		A	M		A
pH (S.U.)	6.9		7.2	6.8		7.1
Temperature °C	25.7		~~24.0~~ BA ~~24.0~~	24.5		24.1
Dissolved Oxygen mg/L aerate if < 4	8.1		7.6	8.0		7.7
Conductivity (µmhos) mmhos	312		333 ~~207~~ BA	319		333
Salinity ppth						
(initials) Measured by:	BA		BA	BA	—	MF
(initials) Recorded by:	BA		BA	BA	—	MF

Comments:

Salinity only needs measuring if saltwater.

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 aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(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 aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

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FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 127348 Test #: 2 of 2

TEST SOP #: TA07 02 Test Species: ☐ *Ceriodaphnia dubia* ☒ *Cyprinella leedsi* ☐ *Pimephales promelas*

Test aerated: yes (no) (circle one) Check 1: ☐ *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	C	D	A
pH (S.U.)	8.0	8.2	8.3	8.2	8.1	8.3
Temperature °C	25.9	24.8	24.8	25.3	24.9	24.6
Dissolved Oxygen mg/L aerate if < 4	8.0	7.8	7.7	7.8	6.9	6.9
Conductivity (µmhos) mmhos	311	300	296	307	282	291
Salinity ppth	—	—	—	—	—	—
(initials) Measured by:	KMM	KMM	KMM	KMM	JD	MA
(initials) Recorded by:	KMM	KMM	KMM	KMM	JD	MA

Comments:

Concentration 100 %	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C	C	D	A
pH (S.U.)	6.6	6.6	6.7	6.5	6.8	6.8
Temperature °C	25.9	24.5	25.1	25.4	25.0	24.4
Dissolved Oxygen mg/L aerate if < 4	8.5	7.7	7.6	8.0	6.8	7.0
Conductivity (µmhos) mmhos	334	347	344	339	326	330
Salinity ppth	—	—	—	—	—	—
(initials) Measured by:	KMM	KMM	KMM	KMM	JD	MA
(initials) Recorded by:	KMM	KMM	KMM	KMM	JD	MA

Comments:

Salinity only needs measuring if saltwater.

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 aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(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 aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

FDEP Biology Laboratory - Acute Screen 4/24 Bioassay Bench Sheets

Facility: Town of Century WWTF
Address: Jefferson Street
City: Century **County:** Escambia
Contact/District: Kim Allen / NWD
NPDES Permit #: FL 0032468
LIMS Job #: TLH-2010 - 05-25-59 **LIMS Sample #:** 127487
Lims Data Entry: 6-15-10 MF **Data Entry Verification** BA 6.16.10

Sample Collection: Date: 5-25-10 Time: 1205
Hold Time Start: Date: 5-25-10 Time: 1205
Sample: 4 of 4

Comments:

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

Test 1 validation:
Control survival ≥90%: (Yes) No
Temperature Range ≤3°C: (Yes) No
Test 1: SOP TA 07_01

Test 2 validation:
Control survival ≥90%: (Yes) No
Temperature Range ≤3°C: (Yes) No
Test 2: SOP TA 07_02

(√one)
Test 1 incubated in: ☑ Incubator #: 2 ☐ Waterbath #:
Test 2 incubated in: ☑ Incubator #: 2 ☐ Waterbath #:

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

Sample Validation:
Temperature: Shipped ≤6°C (Yes) No — If 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)

Investigators' Signatures
Bruce Alexander
Kim M Spencer
Marshall Faircloth
James Danish

Sue Miller
REVIEWER

Water Quality Parameters	Original Sample	Other	Measured by	Verified by
Field Total Residual Cl_2 (mg/L):	Not Measured		Not Measured	MF
Lab Total Residual Cl_2 (mg/L):	<0.03 MF 5/26/10		TAMS	MF
Alkalinity (mg/L as $CaCO_3$):	56		BA	MF
Hardness (mg/L as $CaCO_3$):	50		BA	MF
Total Ammonia (mg/L as N):	<0.017		MF	BA
Conductivity: umhos mmhos	306		BA	MF
Salinity (ppth):	0.07		BA	MF

V 2.2 7/1/08

Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 127348 7 Test #: ~~3/4~~ 4/4 BA SOP#:TA 07 01 Test Started: Date 5.25.10 Time: 13:45

Organism/Batch/Age: C.dubia /15.10/<24hrs Test Ended: Date 5-29-10 Time: 1100

Chamber/Test Volume: 30 / 20 ml Diluent/ Batch: DMW / 5.11.10 Test Duration: 48 hr 96 hr

Food/Batch: ☑ YCT 10.30.09 ☑ P.sub 12.23.09

☐ Artemia: 0hr 5x 24hr ____ 48hr ____ 72hr ____ Artemia Lot# ____

Feeding: ☑ Prior to Test ☑ Prior to Renewal ☑ 0 hr ☐ 24 hr ☑ 48 hr ☐ 72 hr

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Ctrl	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
100%	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
			BA	BA	KMM	KMM	BO	MF

Loaded/Verified by: BA / MF Checked by:

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

Test Results:

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

% mortality in 100% sample: 0 % LC50: >100%

If Calculated: 95% CI ____ Method ____

Comments:

V 2.3 7/15/2008

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 #: 273487 Test #: 4/4 SOP#:TA 07 02 Test Started: Date 5-25-10 Time: 1245
Organism/Batch/Age: C. reedsi / 5-25-10 / 8 days Test Ended: Date 5-29-10 Time: 1100
Chamber/Test Volume: 1000 500 ml Diluent/ Batch: well / 5-24-10 Test Duration: 48 hr 96 hr
Food/Batch: ☐ YCT ☐ P.sub
☑ Artemia: 0hr 84-10 24hr 48hr 85-10 72hr Artemia Lot# 23613
Feeding: ☑ Prior to Test ☐ Prior to Renewal ☑ 0 hr ☐ 24 hr ☑ 48 hr ☐ 72 hr

Concentration	Replicate (A)	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
CTRL	G1	A	5	5	5	5	5	5
	G2	B	5	5	5	5	5	5
	G3	C	5	5	5	5	5	5
	G4	D	5	5	5	5	5	5
100%	G5	A	5	5	5	5	5	5
	G6	B	5	5	5	5	5	5
	G7	C	5	5	5	5	5	5
	G8	D	5	5	5	5	5	5

Loaded/Verified by: JD / KMS Checked by: KMS PMS PMS BA JD DF
m = missing d = dead BR/AR = Before/After Renewal
Test Results:
Screening Tests: Report LC50 as >100%, =100%, or <100%.
% mortality in 100% sample: 0% LC50: >100%
If Calculated: 95% CI Method
Comments: (A) Replicate # and Chamber # swapped

V 2.3 7/15/2008

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

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FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

IMS Sample # : 1273487 Test #: 1 of 2

EST SOP #: TA07 01 Test Species: ☑ *Ceriodaphnia dubia* ☐ *Cyprinella leedsi* ☐ *Pimephales promelas*

est aerated: yes (no) (circle one) Check 1: ☐ *Americamysis bahia* ☐ *Menidia beryllina* ☐ Other:

Concentration Ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		A	M		A
H (S.U.)	7.8		8.3	7.9		8.2
emperature °C	24.0		24.0	24.0	24.0	24.3
issolved Oxygen mg/L erate if < 4	7.7		7.4	7.3		7.8
onductivity µmhos mmhos	180		212	178		200
alinity ppth						
(initials) Measured by:	BA		BA	BA	MF	MF
(initials) Recorded by:	BA		BA	BA	MF	MF

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		A	M		A
pH (S.U.)	7.3		8.1	7.3		7.7
Temperature °C	24.0		24.0	24.7	25.5	25.8
Dissolved Oxygen mg/L aerate if < 4	7.8		7.3	7.8		7.8
Conductivity µmhos mmhos	308		372	307		316
Salinity ppth						
(initials) Measured by:	BA		BA	BA	MF	MF
(initials) Recorded by:	BA		BA	BA	MF	MF

Comments:

Salinity only needs measuring if saltwater.

Concentration	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
eplicate						
H (S.U.)						
emperature °C						
issolved Oxygen mg/L erate if < 4						
onductivity µmhos mmhos						
alinity ppth						
(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 aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

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FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 1273487 Test #: 2 of 2

TEST SOP #: TA07 02 Test Species: ☐ *Ceriodaphnia dubia* ☒ *Cyprinella leedsi* ☐ *Pimephales promelas*

Test aerated: yes (no) (circle one) Check 1: ☐ *Americamysis bahia* ☐ *Menidia beryllina* ☐ Other:

Concentration 4ri	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C	C	D	A
pH (S.U.)	8.0	8.3	8.3	8.2	8.2	8.4
Temperature °C	25.9	25.4	25.1	25.8	24.6	25.5
Dissolved Oxygen mg/L aerate if < 4	7.9	8.0	7.8	7.8	7.0	7.3
Conductivity (µmhos) mmhos	303	296	293	299	279	294
Salinity ppth	—	—	—	—	—	
(initials) Measured by:	KMS	KMS	KMS	KMS	JS	MF
(initials) Recorded by:	KMS	KMS	KMS	KMS	JS	MF

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C	C	D	A
pH (S.U.)	7.2	7.6	7.7	7.3	7.5	7.6
Temperature °C	25.9	25.3	25.2	25.7	24.5	25.8
Dissolved Oxygen mg/L aerate if < 4	8.3	8.0	7.7	7.9	7.1	7.1
Conductivity (µmhos) mmhos	318	326	325	321	310	321
Salinity ppth	—	—	—	—	—	
(initials) Measured by:	KMS	KMS	KMS	KMS	JS	MF
(initials) Recorded by:	KMS	KMS	KMS	KMS	JS	MF

Comments:

Salinity only needs measuring if saltwater.

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 aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(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 aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

Appendix B. (continued)

Bioassay Instrument ID

Test ID: Town of Cranbury unit 1 Dates: May 25-29, 2010

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+	✓
Metller-Toledo SevenMulti Conductivity Meter	SN 1225117049 Probe H04257	TA06_25	Conductivity	SM 2510 B	✓
			Salinity	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 of electronic and non-mercury filled thermometers.

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

actual by M. Faircloth 6/16/10

V 1.1 6/12/08 MF

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Appendix C. SRT Bench Sheets and Statistical Analysis

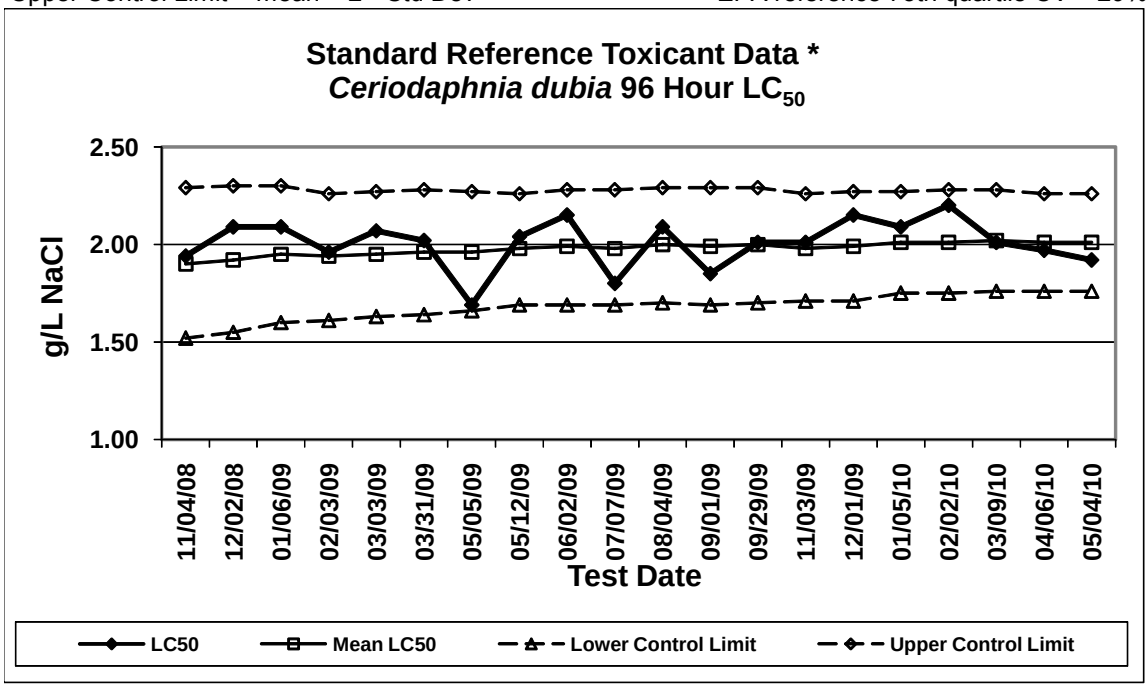
Florida Department of Environmental Protection
Bureau of Laboratories

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

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
11/04/08	1.94	1.90	0.19	1.52	2.29
12/02/08	2.09	1.92	0.19	1.55	2.30
01/06/09	2.09	1.95	0.17	1.60	2.30
02/03/09	1.96	1.94	0.16	1.61	2.26
03/03/09	2.07	1.95	0.16	1.63	2.27
03/31/09	2.02	1.96	0.16	1.64	2.28
05/05/09	1.69	1.96	0.15	1.66	2.27
05/12/09	2.04	1.98	0.14	1.69	2.26
06/02/09	2.15	1.99	0.15	1.69	2.28
07/07/09	1.80	1.98	0.15	1.69	2.28
08/04/09	2.09	2.00	0.15	1.70	2.29
09/01/09	1.85	1.99	0.15	1.69	2.29
09/29/09	2.01	2.00	0.15	1.70	2.29
11/03/09	2.01	1.98	0.14	1.71	2.26
12/01/09	2.15	1.99	0.14	1.71	2.27
01/05/10	2.09	2.01	0.13	1.75	2.27
02/02/10	2.20	2.01	0.13	1.75	2.28
03/09/10	2.01	2.02	0.13	1.76	2.28
04/06/10	1.97	2.01	0.12	1.76	2.26
05/04/10	1.92	2.01	0.12	1.76	2.26

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

CV = 6.20
EPA reference 75th quartile CV = 29%



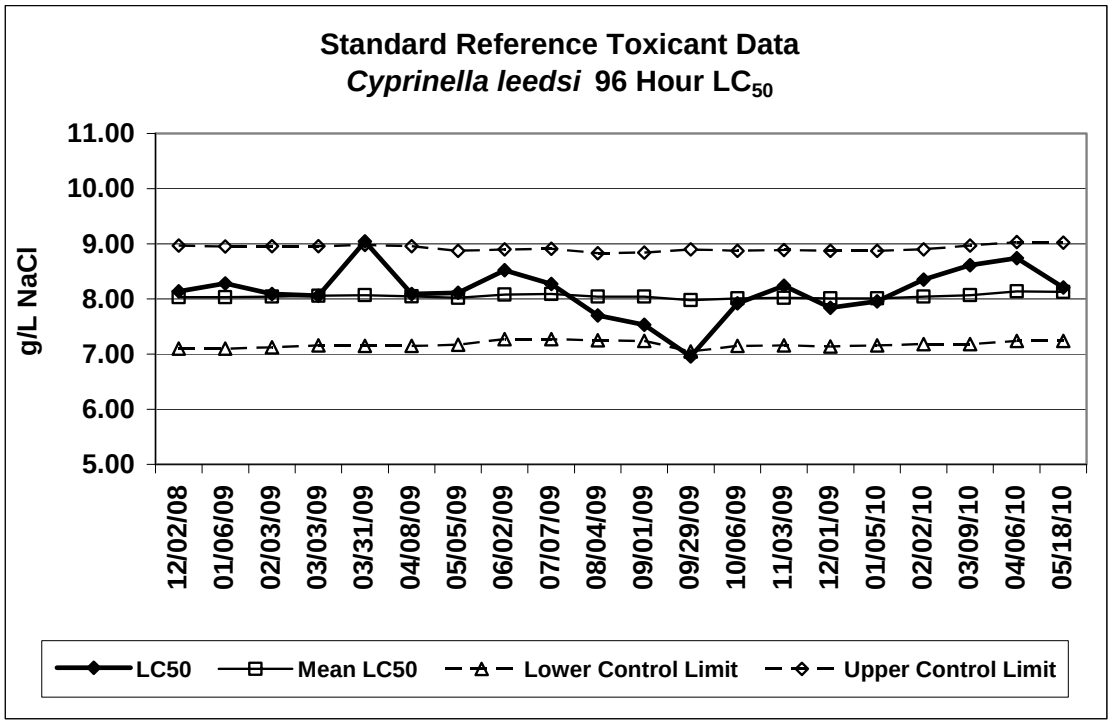
Appendix C. (continued)

Florida Department of Environmental Protection
Bureau of Laboratories

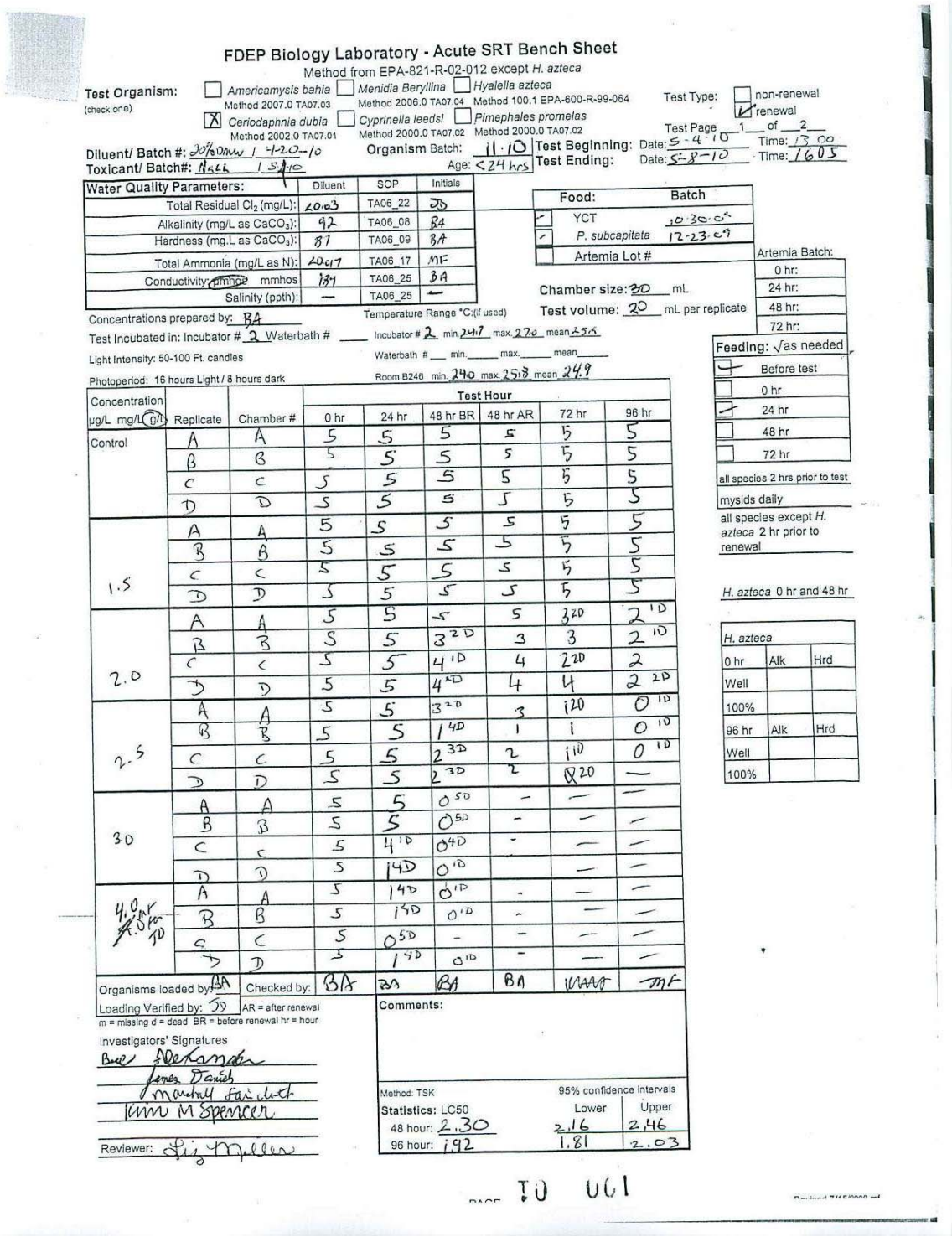
Standard Reference Toxicant (SRT) Test Data - 96-hour Acute Toxicity
Cyprinella leedsi (bannerfin shiner) - Sodium Chloride (NaCl)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
12/02/08	8.14	8.03	0.47	7.10	8.97
01/06/09	8.28	8.03	0.46	7.10	8.95
02/03/09	8.09	8.04	0.46	7.12	8.96
03/03/09	8.06	8.06	0.45	7.16	8.96
03/31/09	9.04	8.07	0.46	7.15	8.98
04/08/09	8.09	8.05	0.45	7.15	8.96
05/05/09	8.11	8.02	0.43	7.17	8.87
06/02/09	8.52	8.08	0.41	7.27	8.90
07/07/09	8.27	8.09	0.41	7.27	8.91
08/04/09	7.70	8.04	0.40	7.25	8.83
09/01/09	7.53	8.04	0.40	7.24	8.84
09/29/09	6.96	7.98	0.46	7.05	8.90
10/06/09	7.92	8.01	0.43	7.15	8.87
11/03/09	8.24	8.02	0.43	7.16	8.89
12/01/09	7.84	8.01	0.43	7.14	8.87
01/05/10	7.96	8.01	0.43	7.16	8.87
02/02/10	8.35	8.04	0.43	7.18	8.90
03/09/10	8.61	8.07	0.45	7.18	8.97
04/06/10	8.74	8.14	0.45	7.24	9.03
05/18/10	8.21	8.13	0.45	7.24	9.02

NOTE: Test of 5/4/2010 invalidated due to concentration error (96 hr LC50 of 8.76 g/L not plotted)
Lower Confidence Limit = mean - 2 * Std Dev **CV = 5.48**
Upper Confidence Limit = mean + 2 * Std Dev EPA reference 75th quartile CV = 19%



Appendix C. (continued)



FDEP Biology Laboratory - Acute SRT Bench Sheet

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

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

Test Type: ☐ non-renewal ☑ renewal

Test Page 1 of 2

Diluent/ Batch #: 20%DMW / 4-20-10

Toxicant/ Batch#: NaCl 1.5/10

Organism Batch: 11.10 Age: < 24 hrs

Test Beginning: Date: 5-4-10 Time: 13 00

Test Ending: Date: 5-8-10 Time: 1605

Water Quality Parameters:	Diluent	SOP	Initials
Total Residual Cl_2 (mg/L):	<0.03	TA06_22	ZD
Alkalinity (mg/L as $CaCO_3$):	92	TA06_08	BA
Hardness (mg.L as $CaCO_3$):	87	TA06_09	BA
Total Ammonia (mg/L as N):	<0.17	TA06_17	MF
Conductivity: ~~mmhos~~ mmhos	184	TA06_25	BA
Salinity (ppth):	—	TA06_25	—

Food:	Batch
✓ YCT	10-30-09
✓ *P. subcapitata*	12-23-09
☐ Artemia Lot #	

Artemia Batch:

0 hr:

24 hr:

48 hr:

72 hr:

Chamber size: 30 mL

Test volume: 20 mL per replicate

Concentrations prepared by: BA

Temperature Range °C:(if used)

Test Incubated in: Incubator # 2 Waterbath # ____ Incubator # 2 min. 24.7 max. 27.0 mean 25.5

Light Intensity: 50-100 Ft. candles Waterbath # ___ min. ____ max. ____ mean ____

Photoperiod: 16 hours Light / 8 hours dark Room B246 min. 24.0 max. 25.8 mean 24.9

Feeding: √as needed

☐ Before test

☐ 0 hr

☑ 24 hr

☐ 48 hr

☐ 72 hr

all species 2 hrs prior to test

mysids daily

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

H. azteca 0 hr and 48 hr

Concentration ug/L mg/L g/L	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Control	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
1.5	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
2.0	A	A	5	5	5	5	3 2D	2 1D
	B	B	5	5	3 2D	3	3	2 1D
	C	C	5	5	4 1D	4	2 2D	2
	D	D	5	5	4 1D	4	4	2 2D
2.5	A	A	5	5	3 2D	3	1 2D	0 1D
	B	B	5	5	1 4D	1	1	0 1D
	C	C	5	5	2 3D	2	1 1D	0 1D
	D	D	5	5	2 3D	2	0 2D	—
3.0	A	A	5	5	0 5D	—	—	—
	B	B	5	5	0 5D	—	—	—
	C	C	5	4 1D	0 4D	—	—	—
	D	D	5	1 4D	0 1D		—	—
4.0 ~~4.5~~ for 7D	A	A	5	1 4D	0 1D	—	—	—
	B	B	5	1 4D	0 1D	—	—	—
	C	C	5	0 5D	—	—	—	—
	D	D	5	1 4D	0 1D	—	—	—

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

Organisms loaded by: BA Checked by: BA ZD BA BA MF MF

Loading Verified by: SD AR = after renewal

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

Comments:

Investigators' Signatures

Brian DeRamus

James Daniels

Marshall Faircloth

Kim M Spencer

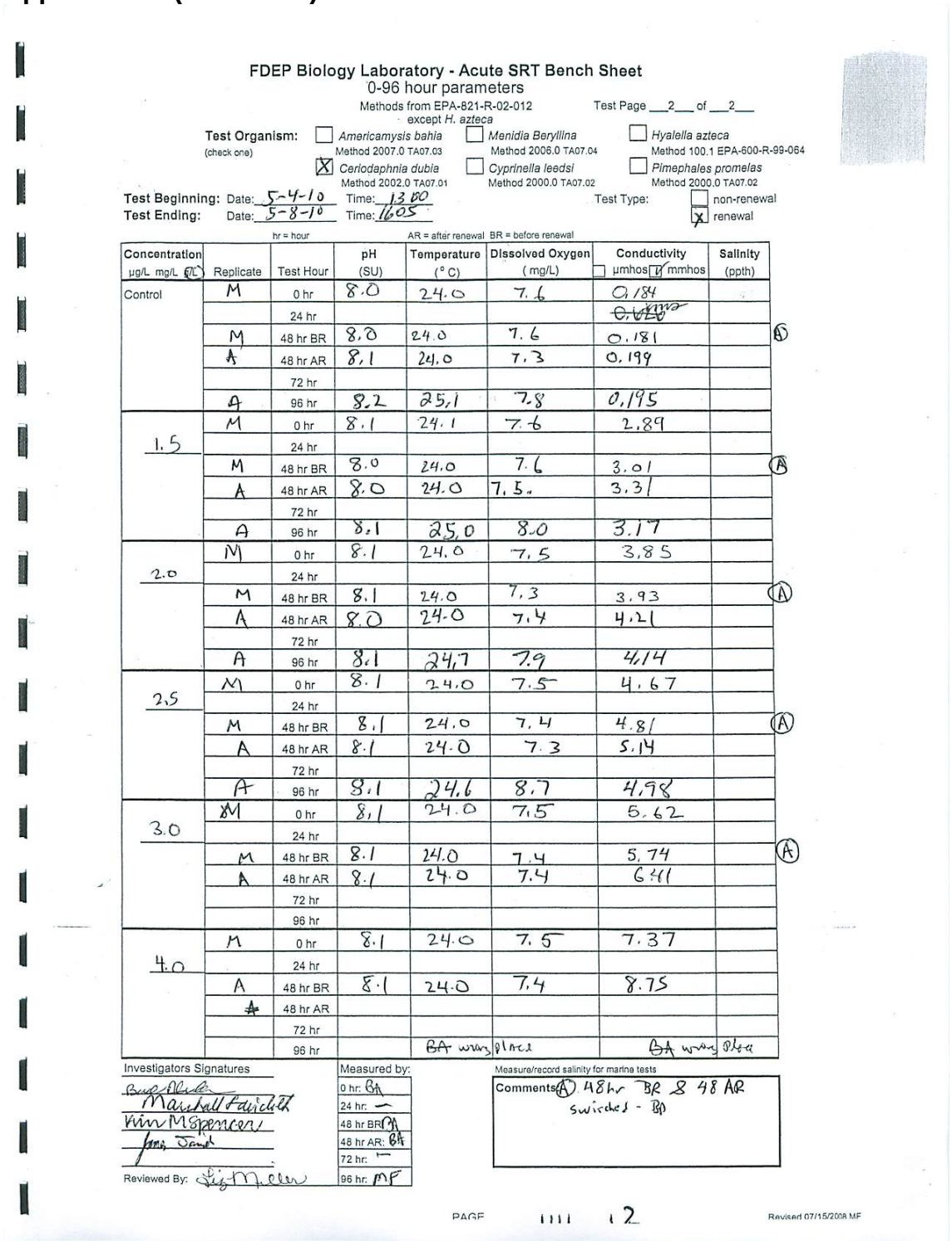
Reviewer: Liz Miller

Method: TSK

Statistics: LC50	95% confidence intervals Lower	Upper
48 hour: 2.30	2.16	2.46
96 hour: 1.92	1.81	2.03

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Appendix C. (continued)



FDEP Biology Laboratory - Acute SRT Bench Sheet
0-96 hour parameters
Methods from EPA-821-R-02-012 except *H. azteca*
Test Page 2 of 2

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

Test Beginning: Date: 5-4-10 Time: 1300
Test Ending: Date: 5-8-10 Time: 1605
Test Type: ☐ non-renewal ☒ renewal

hr = hour AR = after renewal BR = before renewal

Concentration µg/L mg/L (%)	Replicate	Test Hour	pH (SU)	Temperature (° C)	Dissolved Oxygen (mg/L)	Conductivity ☐ µmhos ☒ mmhos	Salinity (ppth)	
Control	M	0 hr	8.0	24.0	7.6	0.184		
		24 hr				~~0.~~		
	M	48 hr BR	8.0	24.0	7.6	0.181		A
	A	48 hr AR	8.1	24.0	7.3	0.199		
		72 hr						
	A	96 hr	8.2	25.1	7.8	0.195		
1.5	M	0 hr	8.1	24.1	7.6	2.89		
		24 hr						
	M	48 hr BR	8.0	24.0	7.6	3.01		A
	A	48 hr AR	8.0	24.0	7.5	3.31		
		72 hr						
	A	96 hr	8.1	25.0	8.0	3.17		
2.0	M	0 hr	8.1	24.0	7.5	3.85		
		24 hr						
	M	48 hr BR	8.1	24.0	7.3	3.93		A
	A	48 hr AR	8.0	24.0	7.4	4.21		
		72 hr						
	A	96 hr	8.1	24.7	7.9	4.14		
2.5	M	0 hr	8.1	24.0	7.5	4.67		
		24 hr						
	M	48 hr BR	8.1	24.0	7.4	4.81		A
	A	48 hr AR	8.1	24.0	7.3	5.14		
		72 hr						
	A	96 hr	8.1	24.6	8.7	4.98		
3.0	M	0 hr	8.1	24.0	7.5	5.62		
		24 hr						
	M	48 hr BR	8.1	24.0	7.4	5.74		A
	A	48 hr AR	8.1	24.0	7.4	6.41		
		72 hr						
		96 hr						
4.0	M	0 hr	8.1	24.0	7.5	7.37		
		24 hr						
	A	48 hr BR	8.1	24.0	7.4	8.75		
		48 hr AR						
		72 hr						
		96 hr		BA wrong place		BA wrong place		

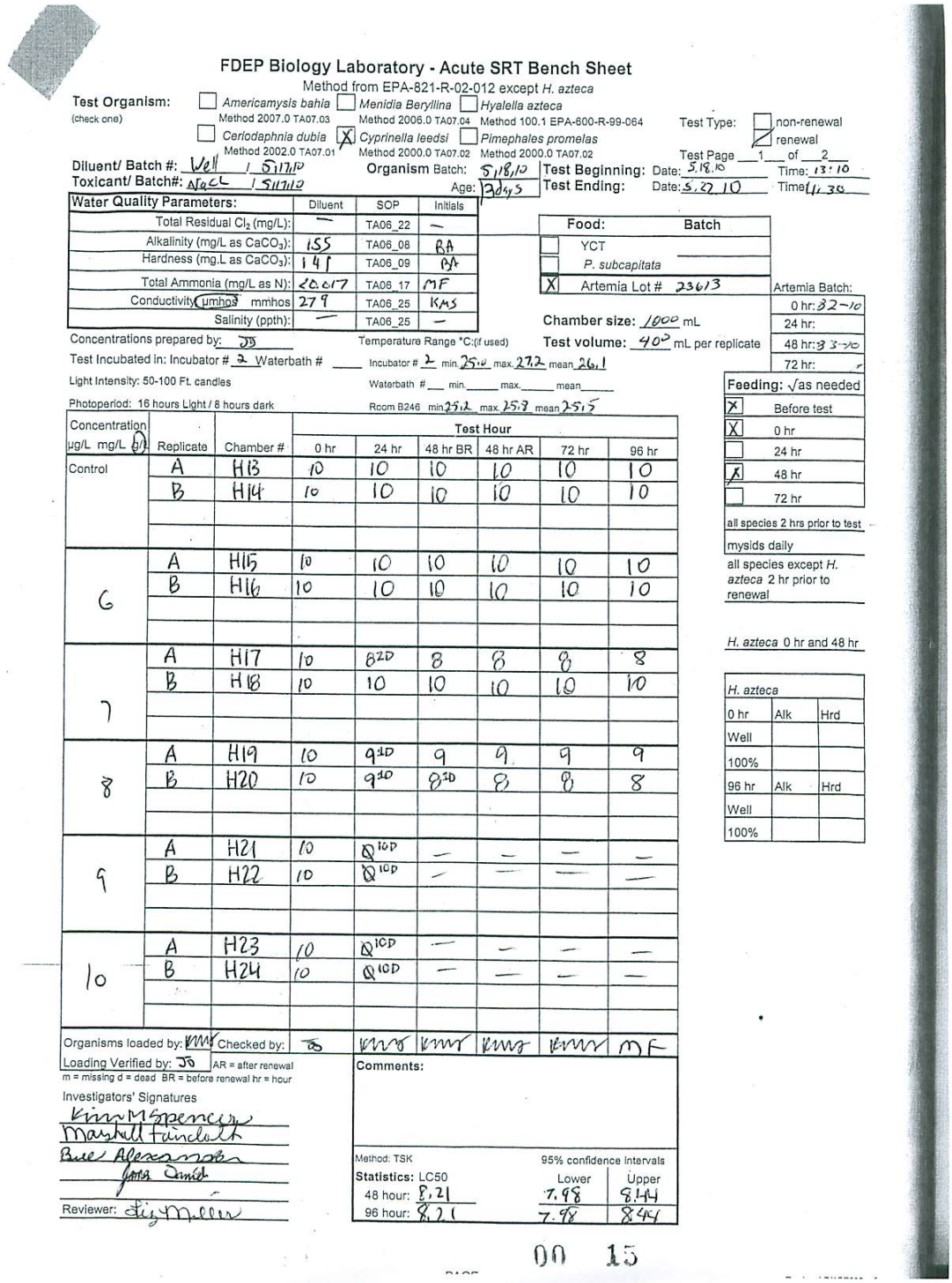
Investigators Signatures
Measured by:
0 hr: BA
24 hr: —
48 hr BR: BA
48 hr AR: BA
72 hr: —
96 hr: MF
Reviewed By:

Measure/record salinity for marina tests

Comments: (A) 48hr BR & 48 AR switched - BA

PAGE 1 of 2 Revised 07/15/2008 MF

Appendix C. (continued)



FDEP Biology Laboratory - Acute SRT Bench Sheet

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

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

Test Type: ☐ non-renewal ☑ renewal

Test Page 1 of 2

Diluent/ Batch #: Well / 5117/10
Toxicant/ Batch#: NaCl / 5117/10
Organism Batch: 5/18/10 Age: 3days
Test Beginning: Date: 5.18.10 Time: 13:10
Test Ending: Date: 5.22.10 Time: 11:30

Water Quality Parameters:	Diluent	SOP	Initials
Total Residual Cl_2 (mg/L):	—	TA06_22	—
Alkalinity (mg/L as $CaCO_3$):	155	TA06_08	BA
Hardness (mg.L as $CaCO_3$):	141	TA06_09	BA
Total Ammonia (mg/L as N):	20.017	TA06_17	MF
Conductivity (µmhos) mmhos	279	TA06_25	KMS
Salinity (ppth):	—	TA06_25	—

Food:	Batch
☐ YCT	
☐ *P. subcapitata*	
☒ Artemia Lot # 23613	

Artemia Batch:
0 hr: 32-10
24 hr:
48 hr: 33-10
72 hr:

Chamber size: 1000 mL
Test volume: 400 mL per replicate

Concentrations prepared by: JD
Test Incubated in: Incubator # 2 Waterbath # ____
Temperature Range °C:(if used)
Incubator # 2 min. 25.0 max. 27.2 mean 26.1
Waterbath # ___ min.____ max.____ mean____
Room B246 min 25.2 max. 25.8 mean 25.5
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark

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

all species 2 hrs prior to test
mysids daily
all species except *H. azteca* 2 hr prior to renewal
H. azteca 0 hr and 48 hr

Concentration µg/L mg/L (circle)	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Control	A	H13	10	10	10	10	10	10
	B	H14	10	10	10	10	10	10
6	A	H15	10	10	10	10	10	10
	B	H16	10	10	10	10	10	10
7	A	H17	10	8 2D	8	8	8	8
	B	H18	10	10	10	10	10	10
8	A	H19	10	9 1D	9	9	9	9
	B	H20	10	9 1D	8 1D	8	8	8
9	A	H21	10	0 10D	—	—	—	—
	B	H22	10	0 10D	—	—	—	—
10	A	H23	10	0 10D	—	—	—	—
	B	H24	10	0 10D	—	—	—	—
Organisms loaded by: KMS Checked by:			KMS	KMS	KMS	KMS	MF	

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

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

Comments:

Investigators' Signatures
Kim M Spencer
Marshall Faircloth
Bree Alexander
Jana Smith

Reviewer: Liz Miller

Method: TSK

Statistics: LC50	95% confidence Intervals Lower	Upper
48 hour: 8.21	7.98	8.44
96 hour: 8.21	7.98	8.44

00 15

Appendix C. (continued)

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

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

Test Page 2 of 2

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

Test Beginning: Date: 5.18.10 Time: 13:10
Test Ending: Date: 5.22.10 Time: 11:30

Test Type: ☐ non-renewal ☑ renewal

hr = hour AR = after renewal BR = before renewal

Concentration µg/L mg/L ‰	Replicate	Test Hour	pH (SU)	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity ☐ µmhos ☑ mmhos	Salinity (ppth)
Control	A	0 hr	7.8	25.9	7.9	0.279	—
	B	24 hr	8.1	25.0	7.1	0.333	—
	A	48 hr BR	8.2	24.9	7.0	0.309	—
	A	48 hr AR	8.1	24.8	7.6	0.296	—
	B	72 hr	8.2	25.1	7.3	0.293	—
	A	96 hr	8.2	25.9	7.2	0.300	—
6	A	0 hr	7.9	25.9	7.7	10.8	—
	B	24 hr	8.0	24.9	6.5	10.2	—
	A	48 hr BR	8.1	24.8	7.0	10.5	—
	A	48 hr AR	8.0	25.4	7.4	10.8	—
	B	72 hr	8.0	25.0	6.9	10.9	—
	A	96 hr	8.0	25.8	6.7	11.5	—
7	A	0 hr	8.0	25.9	7.6	13.1	—
	B	24 hr	8.0	24.8	6.5	12.7	—
	A	48 hr BR	8.1	24.8	7.0	13.4	—
	A	48 hr AR	8.0	25.6	7.3	12.4	—
	B	72 hr	8.0	24.9	6.9	12.4	—
	A	96 hr	8.1	25.8	6.5	12.8	—
8	A	0 hr	8.0	25.9	7.6	14.6	—
	B	24 hr	8.0	24.7	6.3	14.1	—
	A	48 hr BR	8.1	25.1	7.0	14.7	—
	A	48 hr AR	8.0	25.9	7.2	14.7	—
	B	72 hr	8.0	24.8	7.0	14.9	—
	A	96 hr	8.1	25.9	6.6	15.2	—
9	A	0 hr	~~8.0~~ 7.6	25.9	7.6	16.2	—
	B	24 hr	7.9	24.8	6.0	15.7	—
		48 hr BR	—	—	—	—	—
		48 hr AR	—	—	—	—	—
		72 hr	—	—	—	—	—
		96 hr					
10	A	0 hr	7.8	25.9	7.6	18.2	—
	B	24 hr	7.7	24.8	5.3	17.5	—
		48 hr BR	—	—	—	—	—
		48 hr AR	—	—	—	—	—
		72 hr	—	—	—	—	—
		96 hr					

Investigators Signatures
Kim M Spencer
Marshall Faircloth
Bree Alexander
Jane Daniels

Reviewed By: Liz Fuller

Measured by:
0 hr: KMS
24 hr: KMS
48 hr BR: KMS
48 hr AR: KMS
72 hr: KMS
96 hr: MF

Measure/record salinity for marine tests

Comments: (A) 7.8 MF for KMS 6-1-10

PAGE 00 16

Revised 07/15/2008 MF

Appendix C. (continued)

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

DATE: 5-4-10 DURATION: 96 hr TOXICANT: NaCl
SPECIES: *Ceriodaphnia dubia*

RAW DATA: Concentration (g/L)	Number Exposed	Mortalities
.00	20	0
1.50	20	0
2.00	20	12
2.50	20	20
3.00	20	20
4.00	20	20

SPEARMAN-KARBER TRIM: .00%

SPEARMAN-KARBER ESTIMATES: LC50: 1.92
95% LOWER CONFIDENCE: 1.81
95% UPPER CONFIDENCE: 2.03

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

DATE: 5-18-10 DURATION: 96 hr TOXICANT: NaCl
SPECIES: *Cyprinella leedsi*

RAW DATA: Concentration (g/L)	Number Exposed	Mortalities
.00	20	0
6.00	20	0
7.00	20	2
8.00	20	3
9.00	20	20
10.00	20	20

SPEARMAN-KARBER TRIM: .00%

SPEARMAN-KARBER ESTIMATES: LC50: 8.21
95% LOWER CONFIDENCE: 7.98
95% UPPER CONFIDENCE: 8.44

Appendix D. Test Organism Receipts

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Shipping Date: 5/17/10

Ship to: FDEP

P.O. No: _____

Species	Quantity	Age	Brood/Lot Number	Temp. (°C)	pH (S.U.)	Salinity (‰)
Mysidopsis bahia						
Menidia beryllina						
						Hardness mg/L
Cyprinella leedsi	~~1000~~					
	200	12 DAYS	CL100505	25	7.8	80
Pimephales promelas						
Ceriodaphnia dubia						
Daphnia magna						
YCT						
P. subcapitata						

Packed by: _____

Shipped Via: Fed Ex

Notes: _____

Thank you for your order.

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

Appendix D. (continued)

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Shipping Date: ~~5/19/10~~ 5.24.10 J.D.

Ship to: FDEP

P.O. No: _____

Species	Quantity	Age	Brood/Lot Number	Temp. (°C)	pH (S.U.)	Salinity (‰)
Mysidopsis bahia						
Menidia beryllina						
						Hardness mg/L
Cyprinella leedsi	200	7DAYS	CL100517	25	7.8	80
Pimephales promelas						
Ceriodaphnia dubia						
Daphnia magna						
YCT						
P. subcapitata						

Packed by: _____

Shipped Via: FedEx

Notes: _____

Thank you for your order.

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

Appendix E. Chemical Analyses performed on the effluent from the Town of Century Wastewater Treatment Facility Outfall D-001, sampled on May 24, 2010.

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
5/24/2010 11:40	EFF-1	AGP/LN	Algal Growth Potential	137	A	mg DryWt/L	0.3	0.9
5/24/2010 11:40	EFF-1	Chlorophyll/Grain Size/BOD	BOD-5 Day,N-Inhib	0.89	IJ	mg/L	0.2	2
5/24/2010 11:40	EFF-1	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.4	U	ug/L	0.4	1.2
5/24/2010 11:40	EFF-1	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	1.1	I	ug/L	0.55	1.7
5/24/2010 11:40	EFF-1	Overflow	Fecal Coliforms-Membrane Filter	11	B	#/100 mL	1	1
5/24/2010 11:40	EFF-1	Metals	Sodium	34.3		mg/L	0.5	2
5/24/2010 11:40	EFF-1	Metals	Zinc	39		ug/L	5	20
5/24/2010 11:40	EFF-1	Metals	Cadmium	0.09	U	ug/L	0.09	0.36
5/24/2010 11:40	EFF-1	Metals	Magnesium	1.79		mg/L	0.04	0.16
5/24/2010 11:40	EFF-1	Metals	Arsenic	0.25	U	ug/L	0.25	1
5/24/2010 11:40	EFF-1	Metals	Chromium	0.3	U	ug/L	0.3	1.2
5/24/2010 11:40	EFF-1	Metals	Selenium	0.2	U	ug/L	0.2	0.8
5/24/2010 11:40	EFF-1	Metals	Silver	0.025	U	ug/L	0.025	0.1
5/24/2010 11:40	EFF-1	Metals	Aluminum	60	U	ug/L	60	240
5/24/2010 11:40	EFF-1	Metals	Copper	12		ug/L	0.5	1
5/24/2010 11:40	EFF-1	Metals	Nickel	1.25		ug/L	0.25	1
5/24/2010 11:40	EFF-1	Metals	Calcium	16.7		mg/L	0.075	0.3
5/24/2010 11:40	EFF-1	Metals	Iron	36	I	ug/L	30	120
5/24/2010 11:40	EFF-1	Metals	Lead	0.92	U	ug/L	0.92	3.7
5/24/2010 11:40	EFF-1	Nutrients	Ammonia-N	0.087		mg N/L	0.01	0.02
5/24/2010 11:40	EFF-1	Nutrients	Sulfate	25	A	mg SO4/L	0.2	0.5
5/24/2010 11:40	EFF-1	Nutrients	Kjeldahl Nitrogen	0.76		mg N/L	0.08	0.2
5/24/2010 11:40	EFF-1	Nutrients	Total-P	3		mg P/L	0.025	0.25
5/24/2010 11:40	EFF-1	Nutrients	NO2NO3-N	2		mg N/L	0.04	0.1
5/24/2010 11:40	EFF-1	Nutrients	Organic Carbon	3.4	I	mg C/L	1	5
5/24/2010 11:40	EFF-1	Nutrients	Alkalinity	36		mg CaCO3/L	0.65	2.5
5/24/2010 11:40	EFF-1	Nutrients	O-Phosphate-P	2.3		mg P/L	0.16	0.4
5/24/2010 11:40	EFF-1	Nutrients	Color (true)	10		PCU	5	5
5/24/2010 11:40	EFF-1	Nutrients	Chloride	42	A	mg Cl/L	0.2	0.5
5/24/2010 11:40	EFF-1	Nutrients	Fluoride	0.05	U	mg F/L	0.05	0.1
5/24/2010 11:40	EFF-1	Nutrients	TSS	4	I	mg/L	4	16
5/24/2010 11:40	EFF-1	Pesticides	Chlorpyrifos Methyl	0.1	U	ug/L	0.1	0.4
5/24/2010 11:40	EFF-1	Pesticides	Diazinon	0.05	U	ug/L	0.05	0.2
5/24/2010 11:40	EFF-1	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
5/24/2010 11:40	EFF-1	Pesticides	Alpha-BHC	0.01	U	ug/L	0.01	0.04
5/24/2010 11:40	EFF-1	Pesticides	Endosulfan I	0.02	U	ug/L	0.02	0.08
5/24/2010 11:40	EFF-1	Pesticides	Methoxychlor	0.05	UJ	ug/L	0.05	0.2
5/24/2010 11:40	EFF-1	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2
5/24/2010 11:40	EFF-1	Pesticides	Metolachlor	0.5	U	ug/L	0.5	2
5/24/2010 11:40	EFF-1	Pesticides	Metribuzin	0.1	U	ug/L	0.1	0.4
5/24/2010 11:40	EFF-1	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
5/24/2010 11:40	EFF-1	Pesticides	Phorate	0.05	U	ug/L	0.05	0.2
5/24/2010 11:40	EFF-1	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
5/24/2010 11:40	EFF-1	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	1
5/24/2010 11:40	EFF-1	Pesticides	Chlordane	0.2	U	ug/L	0.2	0.8
5/24/2010 11:40	EFF-1	Pesticides	DDE-p,p'	0.02	U	ug/L	0.02	0.08
5/24/2010 11:40	EFF-1	Pesticides	DDT-p,p'	0.03	U	ug/L	0.03	0.12
5/24/2010 11:40	EFF-1	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2
5/24/2010 11:40	EFF-1	Pesticides	Hexazinone	0.1	U	ug/L	0.1	0.4
5/24/2010 11:40	EFF-1	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
5/24/2010 11:40	EFF-1	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
5/24/2010 11:40	EFF-1	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6
5/24/2010 11:40	EFF-1	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
5/24/2010 11:40	EFF-1	Pesticides	DDD-p,p'	0.02	U	ug/L	0.02	0.08
5/24/2010 11:40	EFF-1	Pesticides	Dieldrin	0.02	U	ug/L	0.02	0.08
5/24/2010 11:40	EFF-1	Pesticides	Toxaphene	0.75	U	ug/L	0.75	3
5/24/2010 11:40	EFF-1	Pesticides	Bromacil	0.2	U	ug/L	0.2	0.8
5/24/2010 11:40	EFF-1	Pesticides	Ethoprop	0.1	U	ug/L	0.1	0.4
5/24/2010 11:40	EFF-1	Pesticides	Fonofos	0.1	UJ	ug/L	0.1	0.4
5/24/2010 11:40	EFF-1	Pesticides	Endosulfan II	0.02	U	ug/L	0.02	0.08
5/24/2010 11:40	EFF-1	Pesticides	Endrin	0.05	U	ug/L	0.05	0.2
5/24/2010 11:40	EFF-1	Pesticides	Atrazine	0.05	U	ug/L	0.05	0.2
5/24/2010 11:40	EFF-1	Pesticides	Endosulfan Sulfate	0.02	U	ug/L	0.02	0.08
5/24/2010 11:40	EFF-1	Pesticides	Gamma-BHC	0.01	U	ug/L	0.01	0.04
5/24/2010 11:40	EFF-1	Pesticides	Aldrin	0.01	U	ug/L	0.01	0.04
5/24/2010 11:40	EFF-1	Pesticides	Naled	0.8	U	ug/L	0.8	3.2
5/24/2010 11:40	EFF-1	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.8
5/24/2010 11:40	EFF-1	Pesticides	Butylate	0.2	UJ	ug/L	0.2	0.8
5/24/2010 11:40	EFF-1	Pesticides	Azinphos Methyl	0.2	UJ	ug/L	0.2	0.8
5/24/2010 11:40	EFF-1	Pesticides	Heptachlor Epoxide	0.02	U	ug/L	0.02	0.08

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
5/24/2010 11:40	EFF-1	Pesticides	Endrin Aldehyde	0.02	U	ug/L	0.02	0.08
5/24/2010 11:40	EFF-1	Pesticides	Delta-BHC	0.01	U	ug/L	0.01	0.04
5/24/2010 11:40	EFF-1	Pesticides	Beta-BHC	0.01	U	ug/L	0.01	0.04
5/24/2010 11:40	EFF-1	Pesticides	Heptachlor	0.01	U	ug/L	0.01	0.04
5/24/2010 11:40	EFF-1	Pesticides	Alachlor	0.6	U	ug/L	0.6	2.4
5/24/2010 11:40	EFF-1	Pesticides	Parathion Methyl	0.1	U	ug/L	0.1	0.4
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	2,4-Dinitrotoluene	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	2,6-Dinitrotoluene	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	4-Chloro-3-methylphenol	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	15	U	ug/L	15	61
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	2,4,6-Trichlorophenol	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	3,3'-Dichlorobenzidine	41	U	ug/L	41	160
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Anthracene	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Naphthalene	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	2-Chlorophenol	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	2-Nitrophenol	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2	U	ug/L	2	8.2
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Acenaphthene	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Pyrene	1	UJ	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	2-Chloronaphthalene	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Acenaphthylene	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Diethyl phthalate	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Hexachlorobenzene	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.1	UJ	ug/L	3.1	12
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2	U	ug/L	2	8.2
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Nitrobenzene	2	U	ug/L	2	8.2
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Phenol	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1	U	ug/L	3.1	12
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Benzo(a)anthracene	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Benzo(a)pyrene	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Benzo(k)fluoranthene	1	UJ	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1	U	ug/L	1	4.1

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Butyl benzyl phthalate	5.1	U	ug/L	5.1	20
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Dibenzo(a,h)anthracene	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Fluoranthene	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Fluorene	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Isophorone	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	2,4-Dichlorophenol	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	2,4-Dimethylphenol	10	U	ug/L	10	41
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	2,4-Dinitrophenol	15	U	ug/L	15	61
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Hexachlorobutadiene	3.1	U	ug/L	3.1	12
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.1	U	ug/L	3.1	12
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	61
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Benzidine	100	U	ug/L	100	410
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.1	U	ug/L	3.1	12
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Chrysene	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Di-n-butyl phthalate	5.1	UJ	ug/L	5.1	20
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Di-n-octyl phthalate	1	UJ	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Dimethyl phthalate	10	U	ug/L	10	41
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Hexachloroethane	3.1	U	ug/L	3.1	12
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Phenanthrene	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Benzo(b)fluoranthene	1	UJ	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Benzo(g,h,i)perylene	1	U	ug/L	1	4.1
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	N-Nitrosodimethylamine	2	U	ug/L	2	8.2
5/24/2010 11:40	EFF-1	Priority Organic Pollutants	Pentachlorophenol	3.1	U	ug/L	3.1	12
5/24/2010 11:40	EFF-1	Field Parameter	pH	7.09				
5/24/2010 11:40	EFF-1	Field Parameter	Specific Conductance	299		umhos/cm		
5/24/2010 11:40	EFF-1	Field Parameter	Dissolved Oxygen	8.32		mg/L		
5/24/2010 11:40	EFF-1	Field Parameter	Temperature	27.26		C		
5/24/2010 12:00	Blanks	Metals	Selenium	0.2	U	ug/L	0.2	0.8
5/24/2010 12:00	Blanks	Metals	Calcium	0.075	U	mg/L	0.075	0.3
5/24/2010 12:00	Blanks	Metals	Nickel	0.25	U	ug/L	0.25	1
5/24/2010 12:00	Blanks	Metals	Copper	0.5	U	ug/L	0.5	1
5/24/2010 12:00	Blanks	Metals	Arsenic	0.25	U	ug/L	0.25	1
5/24/2010 12:00	Blanks	Metals	Magnesium	0.04	U	mg/L	0.04	0.16
5/24/2010 12:00	Blanks	Metals	Lead	0.2	U	ug/L	0.2	0.8
5/24/2010 12:00	Blanks	Metals	Silver	0.025	U	ug/L	0.025	0.1
5/24/2010 12:00	Blanks	Metals	Zinc	5	U	ug/L	5	20

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
5/24/2010 12:00	Blanks	Metals	Iron	30	U	ug/L	30	120
5/24/2010 12:00	Blanks	Metals	Chromium	0.3	U	ug/L	0.3	1.2
5/24/2010 12:00	Blanks	Metals	Sodium	0.5	U	mg/L	0.5	2
5/24/2010 12:00	Blanks	Metals	Cadmium	0.03	U	ug/L	0.03	0.12
5/24/2010 12:00	Blanks	Metals	Aluminum	60	U	ug/L	60	240
5/24/2010 12:00	Blanks	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
5/24/2010 12:00	Blanks	Nutrients	Fluoride	0.05	U	mg F/L	0.05	0.1
5/24/2010 12:00	Blanks	Nutrients	Kjeldahl Nitrogen	0.08	U	mg N/L	0.08	0.2
5/24/2010 12:00	Blanks	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
5/24/2010 12:00	Blanks	Nutrients	Chloride	0.2	U	mg Cl/L	0.2	0.5
5/24/2010 12:00	Blanks	Nutrients	Alkalinity	0.65	U	mg CaCO3/L	0.65	2.5
5/24/2010 12:00	Blanks	Nutrients	Total-P	0.004	U	mg P/L	0.004	0.01
5/24/2010 12:00	Blanks	Nutrients	Organic Carbon	1	U	mg C/L	1	5
5/24/2010 12:00	Blanks	Nutrients	Color (true)	5	U	PCU	5	5
5/24/2010 12:00	Blanks	Nutrients	Sulfate	0.2	U	mg SO4/L	0.2	0.5
5/24/2010 12:00	Blanks	Nutrients	NO2NO3-N	0.004	U	mg N/L	0.004	0.01
5/24/2010 12:00	Blanks	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2
5/24/2010 12:00	Blanks	Pesticides	Diazinon	0.05	U	ug/L	0.05	0.2
5/24/2010 12:00	Blanks	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
5/24/2010 12:00	Blanks	Pesticides	Endrin Aldehyde	0.02	U	ug/L	0.02	0.08
5/24/2010 12:00	Blanks	Pesticides	Alachlor	0.6	U	ug/L	0.6	2.4
5/24/2010 12:00	Blanks	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2
5/24/2010 12:00	Blanks	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8
5/24/2010 12:00	Blanks	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
5/24/2010 12:00	Blanks	Pesticides	Aldrin	0.01	U	ug/L	0.01	0.04
5/24/2010 12:00	Blanks	Pesticides	Chlordane	0.2	U	ug/L	0.2	0.8
5/24/2010 12:00	Blanks	Pesticides	DDD-p,p'	0.02	U	ug/L	0.02	0.08
5/24/2010 12:00	Blanks	Pesticides	Endosulfan Sulfate	0.02	U	ug/L	0.02	0.08
5/24/2010 12:00	Blanks	Pesticides	Toxaphene	0.75	U	ug/L	0.75	3
5/24/2010 12:00	Blanks	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	1
5/24/2010 12:00	Blanks	Pesticides	Metribuzin	0.1	U	ug/L	0.1	0.4
5/24/2010 12:00	Blanks	Pesticides	Naled	0.8	U	ug/L	0.8	3.2
5/24/2010 12:00	Blanks	Pesticides	Parathion Methyl	0.1	U	ug/L	0.1	0.4
5/24/2010 12:00	Blanks	Pesticides	Gamma-BHC	0.01	U	ug/L	0.01	0.04
5/24/2010 12:00	Blanks	Pesticides	Heptachlor	0.01	U	ug/L	0.01	0.04
5/24/2010 12:00	Blanks	Pesticides	Heptachlor Epoxide	0.02	U	ug/L	0.02	0.08

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
5/24/2010 12:00	Blanks	Pesticides	Chlorpyrifos Methyl	0.1	U	ug/L	0.1	0.4
5/24/2010 12:00	Blanks	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
5/24/2010 12:00	Blanks	Pesticides	Delta-BHC	0.01	U	ug/L	0.01	0.04
5/24/2010 12:00	Blanks	Pesticides	Endosulfan I	0.02	U	ug/L	0.02	0.08
5/24/2010 12:00	Blanks	Pesticides	Endosulfan II	0.02	U	ug/L	0.02	0.08
5/24/2010 12:00	Blanks	Pesticides	Endrin	0.05	U	ug/L	0.05	0.2
5/24/2010 12:00	Blanks	Pesticides	Atrazine	0.05	U	ug/L	0.05	0.2
5/24/2010 12:00	Blanks	Pesticides	Bromacil	0.2	U	ug/L	0.2	0.8
5/24/2010 12:00	Blanks	Pesticides	Butylate	0.2	UJ	ug/L	0.2	0.8
5/24/2010 12:00	Blanks	Pesticides	Phorate	0.05	U	ug/L	0.05	0.2
5/24/2010 12:00	Blanks	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6
5/24/2010 12:00	Blanks	Pesticides	Beta-BHC	0.01	U	ug/L	0.01	0.04
5/24/2010 12:00	Blanks	Pesticides	Methoxychlor	0.05	UJ	ug/L	0.05	0.2
5/24/2010 12:00	Blanks	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
5/24/2010 12:00	Blanks	Pesticides	Fonofos	0.1	UJ	ug/L	0.1	0.4
5/24/2010 12:00	Blanks	Pesticides	Hexazinone	0.1	U	ug/L	0.1	0.4
5/24/2010 12:00	Blanks	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.8
5/24/2010 12:00	Blanks	Pesticides	Alpha-BHC	0.01	U	ug/L	0.01	0.04
5/24/2010 12:00	Blanks	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
5/24/2010 12:00	Blanks	Pesticides	Azinphos Methyl	0.2	UJ	ug/L	0.2	0.8
5/24/2010 12:00	Blanks	Pesticides	Ethoprop	0.1	U	ug/L	0.1	0.4
5/24/2010 12:00	Blanks	Pesticides	Metolachlor	0.5	U	ug/L	0.5	2
5/24/2010 12:00	Blanks	Pesticides	DDE-p,p'	0.02	U	ug/L	0.02	0.08
5/24/2010 12:00	Blanks	Pesticides	DDT-p,p'	0.03	U	ug/L	0.03	0.12
5/24/2010 12:00	Blanks	Pesticides	Dieldrin	0.02	U	ug/L	0.02	0.08
5/24/2010 12:00	Blanks	Priority Organic Pollutants	2,4-Dichlorophenol	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Benzidine	97	U	ug/L	97	390
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Phenanthrene	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Naphthalene	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Anthracene	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Acenaphthene	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	U	ug/L	1.9	7.8
5/24/2010 12:00	Blanks	Priority Organic Pollutants	2-Chlorophenol	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Benzo(a)pyrene	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9	U	ug/L	2.9	12

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Di-n-octyl phthalate	0.97	UJ	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Diethyl phthalate	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	2,6-Dinitrotoluene	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	3,3'-Dichlorobenzidine	39	U	ug/L	39	160
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Butyl benzyl phthalate	4.9	U	ug/L	4.9	19
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9	UJ	ug/L	2.9	12
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Isophorone	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	58
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Pentachlorophenol	2.9	U	ug/L	2.9	12
5/24/2010 12:00	Blanks	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	2,4-Dinitrophenol	15	U	ug/L	15	58
5/24/2010 12:00	Blanks	Priority Organic Pollutants	2-Chloronaphthalene	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Acenaphthylene	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Benzo(k)fluoranthene	0.97	UJ	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Hexachlorobenzene	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Hexachlorobutadiene	2.9	U	ug/L	2.9	12
5/24/2010 12:00	Blanks	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	U	ug/L	1.9	7.8
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Pyrene	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Di-n-butyl phthalate	4.9	UJ	ug/L	4.9	19
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Fluorene	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Hexachloroethane	2.9	U	ug/L	2.9	12
5/24/2010 12:00	Blanks	Priority Organic Pollutants	2,4-Dimethylphenol	9.7	U	ug/L	9.7	39
5/24/2010 12:00	Blanks	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9	U	ug/L	2.9	12
5/24/2010 12:00	Blanks	Priority Organic Pollutants	2-Nitrophenol	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Benzo(a)anthracene	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Benzo(b)fluoranthene	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Chrysene	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Dimethyl phthalate	9.7	U	ug/L	9.7	39
5/24/2010 12:00	Blanks	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	U	ug/L	1.9	7.8
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Phenol	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.97	U	ug/L	0.97	3.9

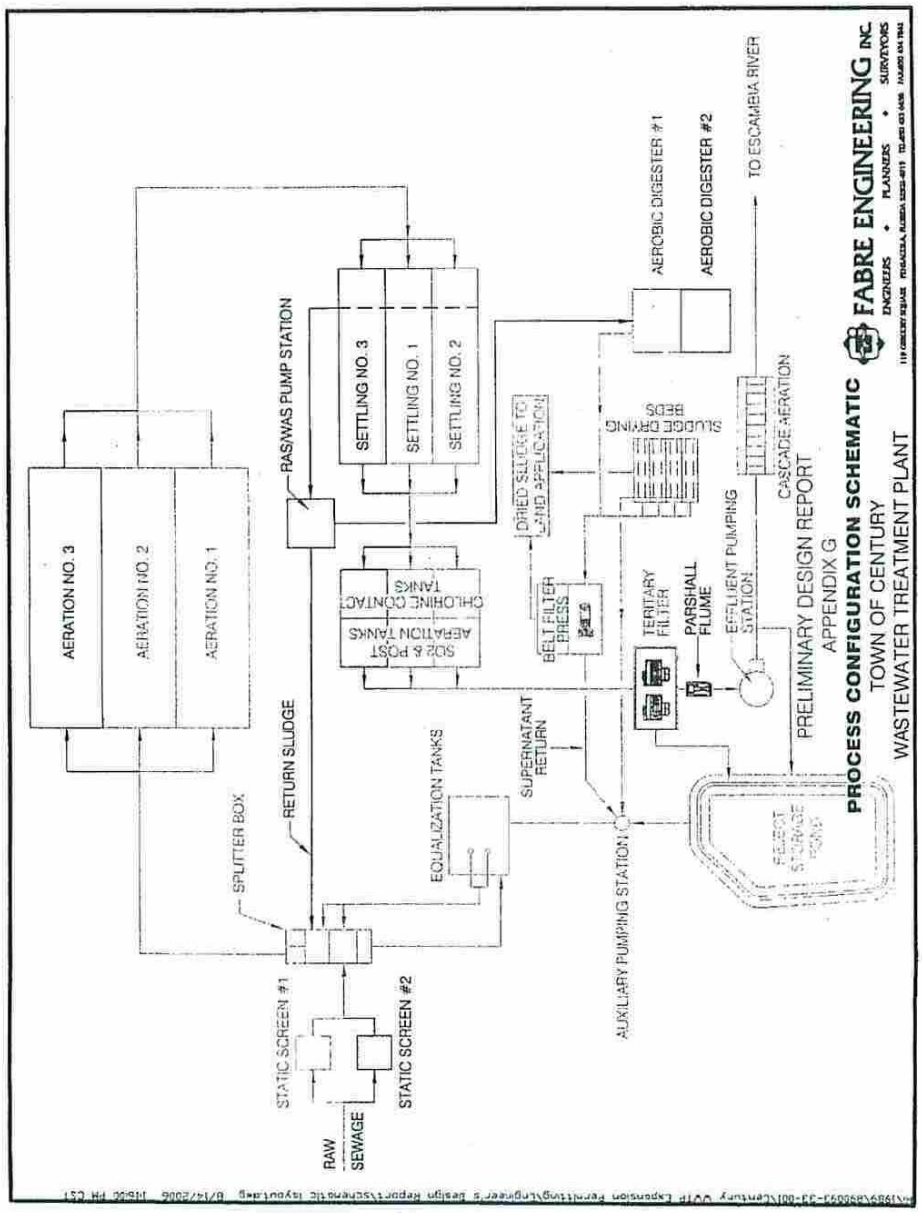
Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
5/24/2010 12:00	Blanks	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	15	U	ug/L	15	58
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Fluoranthene	0.97	U	ug/L	0.97	3.9
5/24/2010 12:00	Blanks	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9	U	ug/L	2.9	12
5/24/2010 12:00	Blanks	Priority Organic Pollutants	Nitrobenzene	1.9	U	ug/L	1.9	7.8
5/24/2010 12:00	Blanks	Priority Organic Pollutants	2,4-Dinitrotoluene	0.97	U	ug/L	0.97	3.9

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

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

An existing 0.675 MGD monthly average daily flow (MADF) permitted capacity conventional extended aeration secondary domestic wastewater treatment plant consisting of flow equalization, influent screening, aeration, secondary clarification, chlorination, dechlorination, and postaeration.



PART I: Continued										
List current Effluent Limits of Outfall(s) to be Sampled: This should include any AO or CO limits the facility may be under (Leave cell blank if not applicable)										
			Effluent Limitations				Monitoring Requirements			
Parameter	Units	Max/Min	Annual Average	Monthly Average	Weekly Average	Single Sample	Monitoring Frequency	Sample Type	Monitoring Location Site Number	Notes

A. Surface Water Discharges

1. During the period beginning on the issuance date and lasting through the expiration date of this permit, the permittee is authorized to discharge effluent from Outfall D-001 to Escambia River to . Such discharge shall be limited and monitored by the permittee as specified below and reported in accordance with condition I.B.7:

			Effluent Limitations				Monitoring Requirements			
Parameter	Units	Max/Min	Annual Average	Monthly Average	Weekly Average	Single Sample	Monitoring Frequency	Sample Type	Monitoring Location Site Number	Notes
Flow	MGD	Maximum	-	0.45	-	-	Continuous	Recording flow meters and totalizers	EFF-01	See Cond I.A.3
BOD, Carbonaceous 5 day, 20C	MG/L	Maximum	20.00	30.0	45.0	60.0	Every Two Weeks	8-hour flow proportioned composite	EFF-01	
Solids, Total Suspended	MG/L	Maximum	20.0	30.0	45.0	60.0	Every Two Weeks	8-hour flow proportioned composite	EFF-01	
pH	SU	Range	-	-	-	6.0 to 8.5	5 Days/Week	Grab	EFF-01	
Coliform, Fecal	#/100 ML	Maximum	See Permit Condition I.A.4				Every Two Weeks	Grab	EFF-01	
Total Residual Chlorine (For Disinfection)	MG/L	Minimum	-	-	-	0.5	5 Days/Week	Grab	EFA-01	See Cond I.A.5
Oxygen, Dissolved (DO)	MG/L	Minimum	-	-	-	6.0	5 Days/Week	Grab	EFF-01	
Total Residual Chlorine (For Dechlorination)	MG/L	Maximum	-	-	-	0.01	5 Days/Week	Grab	EFF-01	
Nitrogen, Ammonia, Total (as N)	MG/L	Maximum	2.0	3.0	4.5	6.0	Every Two Weeks	8-hour flow proportioned composite	EFF-01	
Whole Effluent Toxicity (Acute)	See Permit Condition I.A.6								EFF-01-	

Appendix F. (continued)

PART I: Continued	
Receiving Waters: Escambia River	**Classification (indicate whether fresh or marine):** Class III

Toxicity Test Requirements (routine and/or additional test language, test species, salinity adjustment, etc.):

Test Requirements

(1) Routine Tests: All routine tests shall be conducted using a control (0% effluent) and four bioassays with test concentrations of 100% effluent collected as per 6.d.(1) below.

(3) The permittee shall conduct 96-hour acute static renewal toxicity tests using the daphnid, **Ceriodaphnia dubia,** and the bannerfin shiner, **Cyprinella leedsi**, concurrently.

(4) All test species, procedures and quality assurance criteria used shall be in accordance with **Methods for Measuring Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms**, EPA-821-R-02-012, or the most current edition. Any deviation of the bioassay procedures outlined herein shall be submitted in writing to the Department for review and approval prior to use. In the event the above method is revised, the permittee shall conduct acute toxicity testing in accordance with the revised method.

(5) The control water and dilution water used will be moderately hard water as described in EPA-821-R-02-012, Table 7.

d. Sampling Requirements

(1) Routine tests shall be conducted on four separate grab samples collected at evenly-spaced (6-hr) intervals over a 24-hr period and used in four separate tests in order to catch any peaks of toxicity and to account for daily variations in effluent quality. If the duration of the discharge is less than 24 hours, the duration of discharge shall be documented on the chain of custody.

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

N/A

Facility Mixing Zone Details (if applicable):
N/A

List Permit Violations (DMR data) and plant upsets that occurred at the plant within the last year:

Date	Parameter and Units	Limit	Result
7/09	Fecal coliform (#/100ml)	400/100 (90th percentile)	760
11/09	TSS (mg/L)	60 (max)	72
11/09	TSS (mg/L)	30 (monthly avg)	37
11/09	Fecal coliform (#/100ml)	400 (90th percentile)	530
12/09	Flow (mgd)	.45 (monthly avg)	.48
1/10	Flow (mgd)	.45 (montly avg)	.47
2/10	Flow (mgd)	.45 (monthly avg)	.47

Appendix F. (continued)

Describe previous FYI and WQBEL study:

The previous Fifth Year Inspection (FYI) was conducted in 2005. The effluent copper concentration measured exceeded water quality standards, but the result was questionable due to improper preservation. The impact bioassessment in Escambia River did not identify an effluent impact, even with a high effluent AGP.

The last WQBEL, completed by FDEP's Dr. Richard Wieckowicz in 1995, concluded that the WWTF had no measureable effects on any River parameters.

Describe previous or current Enforcement Actions (including WLs):

Consent Order (OGC File No. 07-2196-17-DW) was executed 1/3/08 to resolve pH and DO violations. All corrective actions were completed and the CO was closed 3/18/2009.

Describe any violations or problems noted in previous inspection:

This facility was last inspected on 2/2/10. The violations noted above were also noted in the inspection report.

Below are results of samples taken during the inspection:

Parameter	Analytical Value	Analytical Method
Temperature	17.8 °C	SM 2550
pH	7.38 s.u.	SM 4500-H+ B
Total Residual Chlorine (Disinfection; basin #1)	2.12 mg/L	EPA 330.5
Total Residual Chlorine (Disinfection; basin #2)	>2.20 mg/L	EPA 330.5
Total Residual Chlorine (Disinfection; basin #3)	1.88 mg/L	EPA 330.5
Total Residual Chlorine (De-Chlorination)	0.02 mg/L	EPA 330.5
Dissolved Oxygen (DO)	9.85 mg/L	ASTM International D888-05
$CBOD_5$	3.2 mg/L	SM 5210B
Fecal Coliform	2B/100ml	SM 9222D
Parameter	Analytical Value	Analytical Method

Discuss whether DMR trends within previous five years are improving or declining:

Overall, DMR trends seem to be improving. However, the flow exceedences need investigation.

Appendix G. EPA End Sheet

The Bioassay of Town of Century Wastewater Treatment Facility effluent sampled on May 23-24, 2010. NPDES #FL0032468.

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 3 2 4 6 8 11	12 1 0 0 5 2 4	18 B	19 S	20 1

Remarks

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The Priority Pollutants Analysis of Town of Century Wastewater Treatment Facility effluent sampled on May 24, 2010. NPDES #FL0032468.

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 3 2 4 6 8 11	12 1 0 0 5 2 4	18 X	19 S	20 1

Remarks

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Biological Analyses of Town of Century Wastewater Treatment Facility effluent sampled on May 24, 2010. NPDES #FL0032468.

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 3 2 4 6 8 11	12 1 0 0 5 2 4	18 S	19 S	20 1

Remarks

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