

Effluent Quality Assessment

Blountstown Wastewater Treatment Facility (WWTF)

Calhoun County

NPDES #FL0026867

Sampled July 16, 18, and 20, 2012

October 2012

Biology Section
Bureau of Laboratories
Division of Environmental Assessment and Restoration

Quality Manual No. 870346G
NELAC Certification No. E31780

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Blountstown WWTF, 16140 SE Johnson Street, Blountstown, Calhoun County, Florida, 32424. NPDES #FL0026867. Effluent composite samples for bioassays were collected on July 16, 18, and 20, 2012, and effluent composite and grab samples for biological and chemical analyses for this facility were collected on July 16, 2012.

Introduction

Blountstown Wastewater Treatment Facility (WWTF) is an advanced wastewater treatment facility which uses Sequential Batch Reactors (SBR) with phosphorus removal to treat municipal 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 Chris Bass (FDEP Northwest District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling. All DEP SOPs are available on the web at: http://www.dep.state.fl.us/water/sas/sop/index.htm.

See Appendix A for the completed chain of custody form.

The 7-day chronic definitive toxicity tests and algal growth potential test were performed following internal DEP SOPs TA07_05, TA07_09, and TA08_01 through TA08_09. All internal DEP SOPs are available on the web at: http://www.floridadep.org/labs/cgi-bin/sop/biosop.asp.

Bioassay sample #1441490 was aerated for 30 minutes at a rate of approximately 100 bubbles per minute to decrease the dissolved oxygen (DO) from 10.4 mg/L to 8.1 mg/L.

Results and Discussion

- **Toxicity Test Results**

  Tests were performed July 17-24, 2012.

Ceriodaphnia dubia 7-day chronic definitive bioassay –	IC25: 5.6% NOEC: 6.25%
Pimephales promelas 7-day chronic definitive bioassay –	IC25: > 100% NOEC: 12.5%

  The bioassay samples were chronically toxic to the test organisms. The cause of toxicity was undetermined.

  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 73.4 A 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 total N:P ratio (17.8:1) suggests that the effluent is co-limited by both nitrogen and phosphorus; however, the inorganic N:P ratio (26.5:1) suggests phosphorus limitation. (Table 1; Miller et al. 1978). To determine actual nutrient limitation, a limiting-nutrient algal growth potential test with associated nutrient chemistry should be performed (Miller et al. 1978).

  See Table 1 for AGP results and qualifiers.

- **Chemistry Results**
  Total residual chlorine was not detected in the three bioassay samples in the bioassay laboratory. Total ammonia was not detected in bioassay sample # 1 but was detected in bioassay samples # 2 (0.1235 mg N/L) and # 3 (0.083 mg N/L) in the bioassay laboratory. The total ammonia concentration in the composite sample collected and preserved for chemical analysis was 0.041 mg N/L. Based on the pH, salinity and temperature of the effluent as measured in the lab, the calculated unionized ammonia concentration was < 0.02 mg/L.

  Nickel, zinc, fluoride, and fecal coliforms were detected in the effluent at levels that comply with Class III fresh water quality criteria (62-302.530, F.A.C.). Copper, total suspended solids (TSS), and carbonaceous biological oxygen demand (CBOD) were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL).

  See Table 2 for results of analytes detected in the effluent, corresponding limits, and qualifiers. 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 this facility on July 16, 18, and 20, 2012, were chronically toxic to both test species during the 7-day chronic definitive bioassays. The effluent AGP result was greater than the "problem" threshold for fresh receiving waters suggesting that nutrient enrichment may be an issue. Effluent water quality samples collected on July 16, 2012, did not exceed any applicable water quality standards or violate any permit conditions.

Literature Cited

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

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

Table 1. Measured and predicted algal growth potential (AGP; mg dry weight/L) for total soluble inorganic nitrogen (TSIN), orthophosphate (OP), total nitrogen (TN) and total phosphorus (TP) limitation of the freshwater species *Pseudokirchneriella subcapitata* and ratios of nitrogen to phosphorus for samples collected from the Blountstown WWTF on July 16, 2012.

Blountstown WWTF NPDES# FL0026867								
Location	AGP (measured)	Predicted AGP (TSIN) ± 20%	Predicted AGP (OP) ± 20%	Predicted AGP (TN) ± 20%	Predicted AGP (TP) ± 20%	Inorganic N:P ratio	Total N:P ratio
Effluent	73.4 A	62.4 ± 12.5	26.7 ± 5.3	88.2 ± 17.6	55.9 ± 11.2	26.5	17.8

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

Table 2. Effluent limits, Class III Freshwater Criteria, chemical and microbiological data, and qualifiers for samples collected from the Blountstown WWTF on July 16, 2012.

Blountstown WWTF NPDES# FL0026867	Class III Criteria	Effluent Limits	Effluent	
Metals (µg/L unless otherwise noted)				
Aluminum	-	-	90	
Arsenic	≤ 50	-	0.25	U
Cadmium	≤ 0.4 b	-	0.05	U
Calcium (mg/L)	-	-	35.6	
Chromium-III	≤ 126.5 b	-	0.3	U
Copper	≤ 13.9 b	-	1	I
Iron	≤ 1,000	-	30	U
Lead	≤ 5.8 b	-	0.2	U
Magnesium (mg/L)	-	-	17.2	
Nickel	≤ 77.5 b	-	1.02	
Selenium	≤ 5.0	-	0.2	U
Silver	≤ 0.07	-	0.025	U
Zinc	≤ 178.2 b	-	22	
Nutrients (mg/L)				
Ortho-phosphate	-	-	0.062	
Total Phosphorus	-	≤ 2.0 p	0.13	
Total Ammonia	-	-	0.041	
Un-ionized Ammonia	≤ 0.02 s	-	≤ 0.02	*
Nitrate and Nitrite	-	-	1.6	
Total Kjeldahl Nitrogen	-	-	0.72	
Organic Nitrogen	-	-	0.679	c
Total Nitrogen	-	≤ 6.0 p	2.32	c
General Physical and Chemical Parameters				
Dissolved Oxygen (mg/L)	≥ 5.0	≥ 6.0	10.4	£
pH (SU)	6.0 - 8.5	6.0 - 8.5	6.9	£
Conductivity (µmhos/cm)	≤ 1,275	-	777	£
Temperature (°C)	-	-	25.4	£
Salinity	-	-	0.32	£
Total Residual Chlorine (mg/L)	≤ 0.01	-	≤ 0.03	UQ£
Chlorophyll *a* (µg/L) - Corrected	-	-	8	
Phaeophytin (µg/L)	-	-	1.6	
Total Suspended Solids (mg/L)	-	≤ 10.0 p	3	I
CBOD, 5 day (mg/L), N - inhibited	-	≤ 10.0 p	1.7	IQ
Chloride (mg/L)	-	-	100	
Fluoride (mg/L)	≤ 10.0	-	0.66	
Sulfate (mg/L)	-	-	94	
Flow (MGD)	-	≤ 1.5	0.457	†
Hardness (mg $CaCO_3$)	-	-	159.72	c
Microbiology (Number of colony forming units/100ml)				
Fecal Coliforms ¥	≤ 400s #	≤ 800	96	

Value exceeds the Class III Water Quality Criteria or permit limits

a - Annual average
b - Value is calculated based on hardness
c - Value is calculated
p - 16 hour flow proportioned composite
s - Single sample
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
Q - Sample held beyond normal holding time
U - Material analyzed for but not detected; value reported is the method detection limit
¥ - Fecal coliform analysis performed by The Water Spigot Overflow Laboratory
- If 10 or fewer samples are taken within a month, the single sample limit is 400 CFU (62-302.530(6), F.A.C.)
£ - measurement taken in the FDEP laboratory
* - Based on parameters taken in the FDEP laboratory
† - Flow measured from 6/1/11 - 5/30/12

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2012-06-25-17
FYI3 Blountstown WWTP Sampling Inspection

Requester: Michelle Fish
Field Report Prepared By: N. Milky
Collected By: Nathan Milky
Send Final Report To: Toni Edwards
Sampling Agency: FDEP

Customer: NW-DIST
Project ID: FYI3 ICW 7-17-12
PMAS: 1143

Lab ID *	Location	Comp / Grab	Collection (comp begin or grab) Eastern Central	Composite end Eastern Central	Bottle Group(s)**
	Blountstown WWTP	☑ Comp ☐ Grab	Date 7/15/12 Time 0700	Date 7/16/12 Time 0700	A
	Field ID: Effluent EFF-01	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 30.43376 ☑ dd ☐ dms	Longitude 85.04887 ☑ dd ☐ dms	Comments: from station EFF-01 / fecal sample taken as grab		

Lab ID *	Location	Comp / Grab	Collection (comp begin or grab) Eastern Central	Composite end Eastern Central	Bottle Group(s)**
	Blountstown WWTP	☑ Comp ☐ Grab	Date 7/15/12 Time 0700	Date 7/16/12 Time 0700	A
	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 ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Comments: All samples taken as composite EFF-01		

Lab ID *	Location	Comp / Grab	Collection (comp begin or grab) Eastern Central	Composite end Eastern Central	Bottle Group(s)**
	Blountstown WWTP	☐ Comp ☐ Grab	Date 7/16/12 Time 1200	Date Time	B
	Field ID: Field Blank	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Comments		

Lab ID *	Location	Comp / Grab	Collection (comp begin or grab) Eastern Central	Composite end Eastern Central	Bottle Group(s)**
		☐ Comp ☐ Grab	Date Time	Date Time	
	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 ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Comments: 2 Biosafety Reid in TOX 11:00 7.17.12		

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
	7/16/12	Fed Ex						

* 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

06-28-17

Request Number: RQ-2012-~~05-05-34~~

~~DRAFT~~ Escambia and Perdido Rivers

FY13 Blountstown Requester: ~~Cheryl Bench~~ Michelle Fish

Customer: NW-DIST

Project ID: ~~DISCRETIONARY~~ FY13

PMAS: ~~1305~~ 1143

Collected By:

Sampling Agency: FDEP

Event ID *

Field Report Prepared By:

Send Final Report To: ~~Cheryl Bench~~ Tom Edwards

Lab ID *	Location	Collection (comp begin or grab) Eastern	Composite end Eastern	Bottle Group(s)**
	Blountstown WWTP	☑ Comp ☐ Grab Date 7/18 Time 9:00 Central	Date Time Central	A
	Field ID: TOX2	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 ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Comments	

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

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

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

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By	Date/Time	Received By:	Date/Time
MBrel 6055	7/18 11:39	HD						7-18-17 11:39

* 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-2012-~~0310~~ 06-25-17
~~FY15 Noma WWTP Sampling Inspection~~
FY13 Blountstown

Customer: NW-DIST
Project ID: FY13
PMAS: 1143

Requestor: Michelle Fish
Collected By: Chris Bass
Sampling Agency: FDEP

Field Report Prepared By:
Send Final Report To: Toni Edwards

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	Blountstown WWTP	☑ Comp ☐ Grab	Date 7/19/12 Time 7am Central	Date 7/20/12 Time 7am Central	A
	Field ID: TOX3	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 ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	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 ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	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 ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	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 ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	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 ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Comments 3 Dipassay Rec'd in Tox by JD @ 2:12 7.20.12		

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
	7/20/12 2:00	hand deliver	FDEP	07/20/12 14:00				7/20/12 14:07

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

Appendix B. Bench Sheets

FDEP Biology Laboratory - Chronic Definitive Bench Sheet

Ceriodaphnia dubia

Facility: Blountstown WWTP
Address: 16140 SE Johnson ST., Blountstown
County: Calhoun Zip 32424
NPDES Permit #: FL 0026867
Contact/District: Nathan Mulkey / Northwest

LIMS entry: 8-2-12 MF verified: BA 8.2.12

Diluent/ Batch: ~~20% DMW~~ SDMHW / 7-4-12 Test Days Used: 0-2
~~20% DMW~~ SDMHW / 7-18-12 Test Days Used: 3-5

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

Organism: *Ceriodaphnia dubia*
Organism Batch #: 7-17-12
Organism age : <24 hours
Feeding: Prior to Test and Daily
Food: [x] YCT [x] *P. subcapitata*
Food Batch: 5-14-12 4-2-12
Chamber size : 30 ml
Sample volume : 20 ml

Sample Received	LAB Sample #	LIMS JOB #	LIMS SAMPLE #	Collection Date/Time	Received Date/Time
Test Day 0	1	TLH- 2012-07-17-28	1441490	7-16-12 0800	7-17-12 1035
Test Day 2	2	TLH- 2012-07-18-42	1441804	7-18-12 1000	7-18-12 1139
Test Day 4	3	TLH- 2012-07-20-38	1443229	7-20-12 0800	7-20-12 1400

Water Quality Parameters	Batch # 7-4-12 SDMHW ~~20% DMW~~	7-18-12 SDMHW ~~20% DMW~~	NA Sample 1	NA Sample 2	NA Sample 3	Other:	Measured By:	Verified by:
Field Total Residual Cl_2 (mg/L):	NA	NA	No T measured				—	MF
Lab Total Residual Cl_2 (mg/L):	<0.03	<0.03	<0.03	<0.03	<0.03		RPJD	MF
Alkalinity (mg/L as $CaCO_3$):	64	70	120	116	111		AP	MF
Hardness (mg/L as $CaCO_3$):	82	82	157	157	151		AP	MF
Total Ammonia (mg/L as N):	<0.017	<0.017	<0.017	0.1235	0.083		BA/MF	AP
Conductivity: ~~µmhos~~ mmhos:	303	296	773	808	689		MF /AP	AP/MF
Salinity (ppth):	~~8.1~~ MF for AP		~~19~~ MF for AP				~~MF~~ MF for AP	

Test Incubated in: Incubator #: 2

Loaded by: MF

Temperature Shipped ≤ 6° C (all samples) (yes) no
Holding Time ≤ 36 hours (yes) no
Light Intensity : 50 - 100 ft. candles
Photoperiod : 16 light 8 dark
Temperature Range °C:
Incubator # 3 min. 24.7 max. 26.0 mean —
Room B246 min.____ max.____ mean____
Test min. 25.2 max. 26.1 mean —

Samples 6 & 3 and 3 hour delivered Temperature in specs

Test Replicates	Loaded from culture vial
1	A13
2	A15
3	A24
4	A25
5	B16
6	C2
7	C5
8	C15
9	C18
10	C20

Results	
Control % CV:	15.4%
Dunnetts PMSD:	32.1%
Reproduction NOEC:	6.25%
Reproduction LOEC:	12.5%
Survival NOEC:	100%
Survival LOEC:	~~100%~~ MF 5.6 4.4%
ICP_{20}:	
ICP_{25}:	5.6%

Investigators' signatures
Marshall Faircloth
Adrienne Pennington
Bruce Abel

Liz Miller
REVIEWER

Comments:

Test Page 1 of 6

PAGE 37

revised 07/15/08 MF

FDEP Biology Laboratory - Chronic Definitive Bench Sheet

Ceriodaphnia dubia Survival and Reproduction

SOP TA07_05

Facility: Blounts Town WWTP

LIMS Sample #: 1441490 for lab sample #1

Start Date: 7-17-12 Time: 1130

End Date: 7-23-12 Time: 1210

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	Surviving adults	Neonates per adult
Control	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	5	2	1	4	1	3	3	4	1	4	28	10	2.8
	4	0	0	5	3	0	2	6	0	0	0	16	10	1.6
	5	5	3	0	0	4	0	0	6	5	5	28	10	2.8
	6	14	10	14	12	10	14	14	12	14	13	127	10	12.7
	7													
	8													
	Total	24	15	20	19	15	19	23	22	20	27	199	10	19.9

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	Surviving adults	Neonates per adult
6.25%	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	4	3	2	3	2	4	2	2	5	3	30	10	3.0
	4	0	0	X	0	0	0	0	0	0	0	0	9	0
	5	5	2	|	4	4	3	4X	3	0	5	30	~~8~~ MF 8	3.0
	6	12	11	|	10	12	11	|	15	4	8	83	8	8.3
	7			|				|						
	8			|				|						
	Total	21	16	2	17	18	18	6	20	9	16	143	8	14.3

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

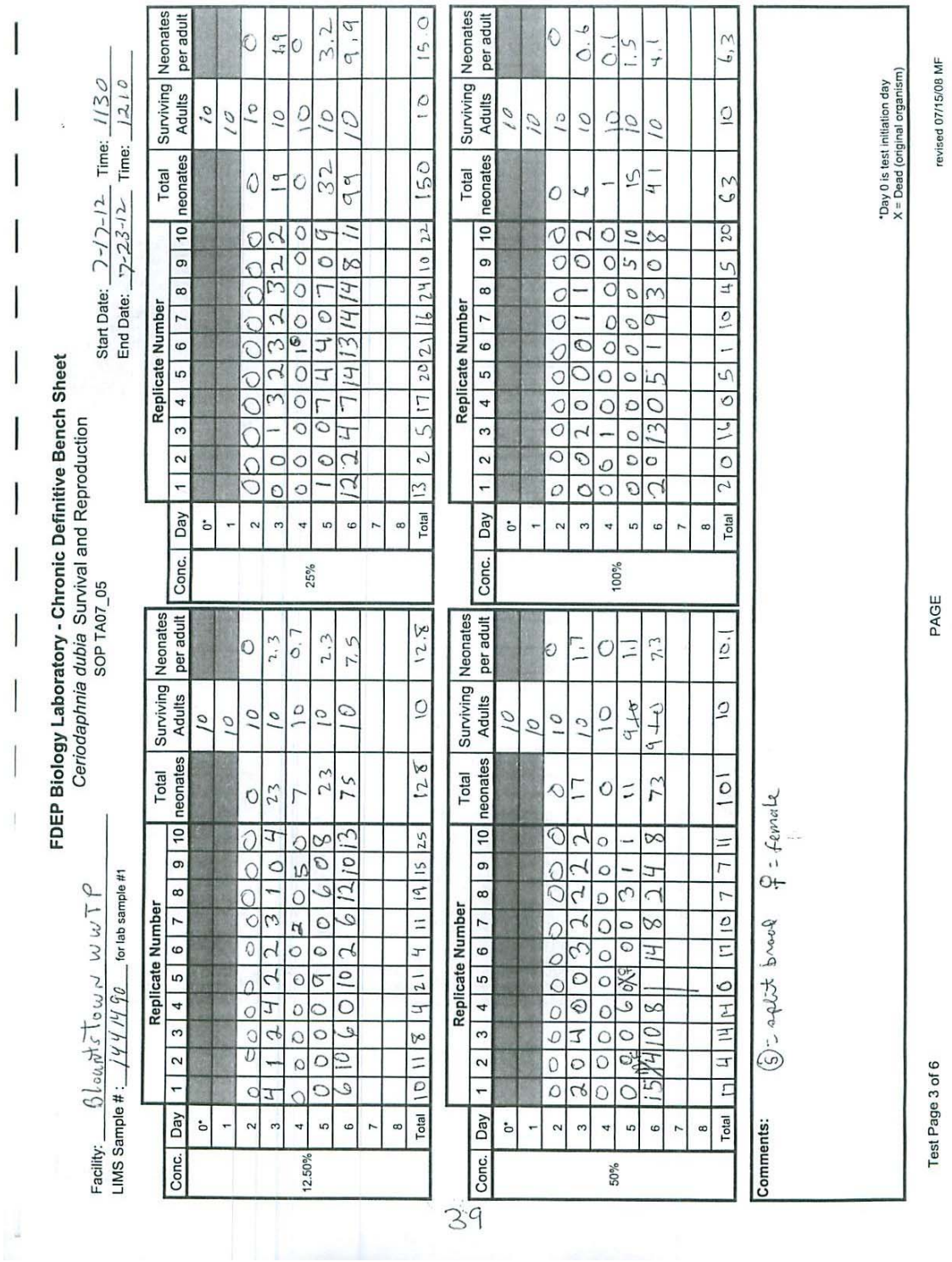
Concentration	Mean neonates /adult	% survival
Control	19.9	100%
6.25%	14.3	80%
12.50%	12.8	100%
25%	15.0	100%
50%	10.1	90%
100%	6.3	100%

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

Comments:

*Day 0 is test initiation day
X = Dead (original organism)

Appendix B. (continued)



FDEP Biology Laboratory - Chronic Definitive Bench Sheet

Ceriodaphnia dubia Survival and Reproduction

SOP TA07_05

Facility: Blountstown WWTP

LIMS Sample #: 1444490 for lab sample #1

Start Date: 2-17-12 Time: 1130

End Date: 2-23-12 Time: 1210

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	Surviving Adults	Neonates per adult
12.50%	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	4	1	2	4	2	2	3	1	0	4	23	10	2.3
	4	0	0	0	0	0	0	2	0	5	0	7	10	0.7
	5	0	0	0	0	9	0	0	6	0	8	23	10	2.3
	6	6	10	6	0	10	2	6	12	10	13	75	10	7.5
	7													
	8													
	Total	10	11	8	4	21	4	11	19	15	25	128	10	12.8
25%	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	0	0	1	3	2	3	2	3	2	2	19	10	1.9
	4	0	0	0	0	0	1	0	0	0	0	0	10	0
	5	1	0	0	7	4	4	0	7	0	9	32	10	3.2
	6	12	2	4	7	14	13	14	14	8	11	99	10	9.9
	7													
	8													
	Total	13	2	5	17	20	21	16	24	10	22	150	10	15.0
50%	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	2	0	4	0	3	2	2	2	2	2	17	10	1.7
	4	0	0	0	0	0	0	0	0	0	0	0	10	0
	5	0	0	0	6	0	0	3	1	1	1	11	9+0	1.1
	6	15	2	4	10	8	1	4	8	2	4	73	9+0	7.3
	7													
	8													
	Total	17	4	14	16	11	10	7	7	11		101	10	10.1
100%	0*												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	0	0	2	0	0	0	1	1	0	2	6	10	0.6
	4	0	0	1	0	0	0	0	0	0	0	1	10	0.1
	5	0	0	0	0	0	0	0	0	5	10	15	10	1.5
	6	2	0	13	0	5	1	9	3	0	8	41	10	4.1
	7													
	8													
	Total	2	0	16	0	5	1	10	4	5	20	63	10	6.3

Comments: ⑤= adult brood ♀ = female

*Day 0 is test initiation day
X = Dead (original organism)

Test Page 3 of 6

PAGE

revised 07/15/08 MF

Appendix B. (continued)

FDEP Biology Laboratory - Chronic Definitive Bench Sheet

Ceriodaphnia dubia Parameters

Facility: Blountstown SOP TA07_05

LIMS Sample #: 1441490 for lab sample 1

Circle µmhos-cm or mmhos-cm

Test Day ↓		Concentration	New Sample: Test Replicate	pH (su)	Temp (°C)	DO (mg/L)	Conductivity (µmhos/cm) (mmhos/cm)	Old Sample: Test Replicate	pH (su)	Temp (°C)	DO (mg/L)	Conductivity (µmhos/cm) (mmhos/cm)
Day 0	sample	Control	M	8.1	25.1	7.7	303					
	1	6.25%	M	7.9	25.1	7.5	336					
	1	12.5%	M	7.9	25.0	7.6	363					
	1	25%	M	7.9	25.0	7.6	423					
	1	50%	M	7.8	25.0	7.6	540					
	1	100%	M	7.9	25.1	7.7	773					
	Measured by:			MF	MF	MF	MF					
	Recorded by:			MF	MF	MF	MF					
Day 1	sample:	Control	M	8.1	24.5	7.5	307	M	8.1	24.1	7.9	337
	1	6.25%	M	8.1	24.6	7.5	338	M	8.1	24.2	7.8	381
	1	12.5%	M	8.1	24.6	7.7	370	M	8.1	24.2	7.9	393
	1	25%	M	8.1	24.6	7.8	429	M	8.0	24.4	7.9	456
	1	50%	M	8.0	24.4	7.8	543	M	8.0	24.8	7.9	568
	1	100%	M	8.0	24.4	7.9	785	M	8.0	24.9	7.9	811
	Measured by:			MF	MF	MF	MF		MF	MF	MF	MF
	Recorded by:			MF	MF	MF	MF		MF	MF	MF	MF
Day 2	sample:	Control	M	7.6	24.3	6.7	299	M	7.7	25.1	6.6	340
	2	6.25%	M	7.5	24.5	6.8	340	M	7.7	24.5	6.7	373
	2	12.5%	M	7.5	24.6	6.9	375	M	7.8	24.2	7.1	372
	2	25%	M	7.5	24.6	6.6	438	M	7.8	24.1	7.1	434
	2	50%	M	7.5	24.0	6.7	563	M	7.9	24.0	7.0	550
	2	100%	M	7.4	24.0	7.0	808	M	7.9	24.0	7.0	812
	Measured by:			BA	MF	BA	BA		BA	BA	BA	BA
	Recorded by:			BA	MF	BA	BA		BA	BA	BA	BA
Day 3	sample:	Control	M	8.1	24.0	7.9	296	M	8.1	24.5	8.0	333
	2	6.25%	M	8.0	24.4	8.0	330	M	8.1	24.8	8.1	374
	2	12.5%	M	8.0	24.6	7.9	359	M	8.1	24.8	8.1	405
	2	25%	M	8.0	24.4	7.8	413	M	8.1	24.8	8.2	471
	2	50%	M	7.9	24.4	7.8	527	M	8.1	25.0	8.2	591
	2	100%	M	7.8	24.3	7.8	758	M	8.0	25.2	8.1	837
	Measured by:			MF	MF	MF	MF		MF	MF	MF	MF
	Recorded by:			MF	MF	MF	MF		MF	MF	MF	MF

Comments:

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

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Appendix B. (continued)

FDEP Biology Laboratory - Chronic Definitive Bench Sheet

Ceriodaphnia dubia Parameters

Facility: Blountstown WWTP SOP TA07_05

LIMS Sample #: 1441490 for lab sample 1

Circle µmhos-cm or mmhos-cm

Test Day ↓		Concentration	New Sample					Old Sample				
			Test Replicate	pH (su)	Temp (°C)	DO (mg/L)	Conductivity (µmhos/cm) (mmhos/cm)	Test Replicate	pH (su)	Temp (°C)	DO (mg/L)	Conductivity (µmhos/cm) (mmhos/cm)
Day 4	sample:	Control	M	7.8	24.4	8.0	561	M	8.0	24.1	7.9	355
	3	6.25%	M	7.9	25.2	8.1	342	M	8.0	23.9	8.0	375
	3	12.5%	M	7.9	25.3	8.1	359	M	8.0	24.5	8.0	391
	3	25%	M	7.9	25.4	8.1	407	M	8.0	24.7	8.0	439
	3	50%	M	8.0	25.7	8.0	505	M	8.0	24.9	8.0	552
	3	100%	M	8.1	26.0	8.0	689	M	8.1	24.5	7.9	800
	Measured by:			AP	AP	AP	AP		AP	AP	AP	AP
	Recorded by:			AP	AP	AP	AP		AP	AP	AP	AP
Day 5	sample:	Control	M	8.1	24.5	7.4	316	M	8.0	25.2	7.5	348
	3	6.25%	M	8.1	24.7	7.3	334	M	8.0	25.1	7.5	378
	3	12.5%	M	8.1	24.7	7.3	358	M	8.0	25.3	7.5	392
	3	25%	M	8.0	24.7	7.3	405	M	8.0	25.4	7.5	444
	3	50%	M	8.0	24.7	7.3	500	M	8.0	25.6	7.6	534
	3	100%	M	8.0	24.7	7.3	694	M	8.0	25.6	7.5	748
	Measured by:			MF	MF	MF	MF		MF	MF	MF	MF
	Recorded by:			MF	MF	MF	MF		MF	MF	MF	MF
Day 6	sample:	Control	M					M	8.1	24.7	7.8	337
	3	6.25%	M					M	8.0	24.8	7.8	357
	3	12.5%	M					M	8.0	25.3	7.7	363
	3	25%	M					M	8.0	25.3	7.6	410
	3	50%	M					M	7.9	25.2	7.6	502
	3	100%	M					M	7.9	24.8	7.7 MF	725
	Measured by:								MF	MF	MF	MF
	Recorded by:								MF	MF	MF	MF
Day 7	sample:	Control	M					M				
	3	6.25%	M					M				
	3	12.5%	M					M				
	3	25%	M					M				
	3	50%	M					M				
	3	100%	M					M				
	Measured by:											
	Recorded by:											

Comments:

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

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Appendix B. (continued)

Test ID: Bioassessment unit 2 Dates: July 17 – 23, 2012

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

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

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

entered by M. Faircloth 7-23-12

V 1.1 9/21/10 MF/jd

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Appendix B. (continued)

FDEP Biology Laboratory - Chronic Bioassay Bench Sheet

Pimphales promelas or *Menidia beryllina*

Facility: Blountstown WWTP
Address: 16140 SE Johnson ST. Blountstown
County: Calhoun Zip 32424
NPDES Permit #: FL 0026867
Contact/District: Nathan McLkey / Northwest

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

Start Date: 7.17.12 Time: 14:00
End Date: 7-24-12 Time: 1000

Diluent/ Batch:
MHW / 7.17.12 Test Days Used: 0-6
MHW /_____ Test Days Used: _____
ASW /_____ Test Days Used: _____
ASW /_____ Test Days Used: _____

Organism age : JD <24 hrs / AP 72 days
Feeding Prior to Test and Daily
Artemia Lot # : 08812
Chamber size : 1000 ml
Test volume : 500 ml

Artemia Batch #		Day 3	98-12
Day 0	95-12	Day 4	99-12
Day 1	96-12	Day 5	100-12
Day 2	97-12	Day 6	101-12

Sample Received	Lab Sample #	LIMS Job #	LIMS Sample #	Collection Date/Time	Received Date/Time
Test Day 0	1	TLH- 2012-07-17-28	1441490	7-16-12 0800	7-17-12 1035
Test Day 2	2	TLH- 2012-07-18-42	1441804	7-18-12 1000	7-18-12 1139
Test Day 4	3	TLH-2012-07-20-38	1443229	7-20-12 0800	7-20-12 1400

Water Quality Parameters	Field Chlorine (mg/L)			Lab Chlorine (mg/L)			Alkalinity (mg/L as $CaCO_3$)			Hardness (mg/L as $CaCO_3$)		
Lab Sample #:	1	2	3	1	2	3	1	2	3	1	2	3
Sample:	Not	measured		<0.03	<0.03	<0.03	120	116	111	157	157	151
Diluent/Control:				<0.03	—	—	71	~~HHR~~	—	85	—	—
Method:				Hach	Hach	Hach	Hach	Hach	Hach	Hach	Hach	Hach
Measured by:				JD/AP	AP	AP	AP	AP	AP	AP	AP	AP
Verified by:	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF

	Conductivity (circle one) (µmhos-cm / mmhos-cm)			Ammonia (mg/L)			Salinity (ppth)		
Lab Sample#:	1	2	3	1	2	3	1	2	3
Sample:	783	797	711	<0.017	0.1235	0.083			
Diluent/Control:	315	~	—	<0.017	—	—			
Method:	Mettler	Mettler	Mettler	Denver	Denver	Denver	Mettler	Mettler	Mettler
Measured by:	AP	AP	JD	BA	MF	MF			
Verified by:	MF	MF	MF	AP	AP	AP			

Lims Entry – 8-1-12 MF
Entry Verification – 8-[illegible]-12 MF

Statistics	
Growth NOEC:	12.5%
Growth LOEC:	25%
Growth IC_{20}:	>100%
Growth IC_{25}:	>100%
Ctrl % CV:	5.67%
Dunnetts PMSD:	25.5%
Survival NOEC:	12.5%
Survival LOEC:	25%

Light Intensity : 50 - 100 ft. candles
Photoperiod : 16 light 8 dark
Temperature Range °C:
Incubator # 3 min. 24.1 max 26.0 mean —
Water bath # ____ min. _____ max. _____ mean _____
Room B246 min. 25.2 max 26.1 mean —

Investigators' signatures
Marianne Pennington
Marshall Faircloth
James Daniel
[illegible]
[illegible]
Liz Miller
REVIEWER

Comments:

00015

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revised 08/24/06 MF/SP

Appendix B. (continued)

Chronic Bioassay Survival Benchsheet

Facility: Blountstown WWTP

LIMS Sample Number: 1441490
(for Lab Sample # 1)

Department of Environmental Protection
Biology Laboratory Chronic Screening Bioassay
***P. promelas* SOP TA07_09 *M. beryllina* SOP TA07_14**

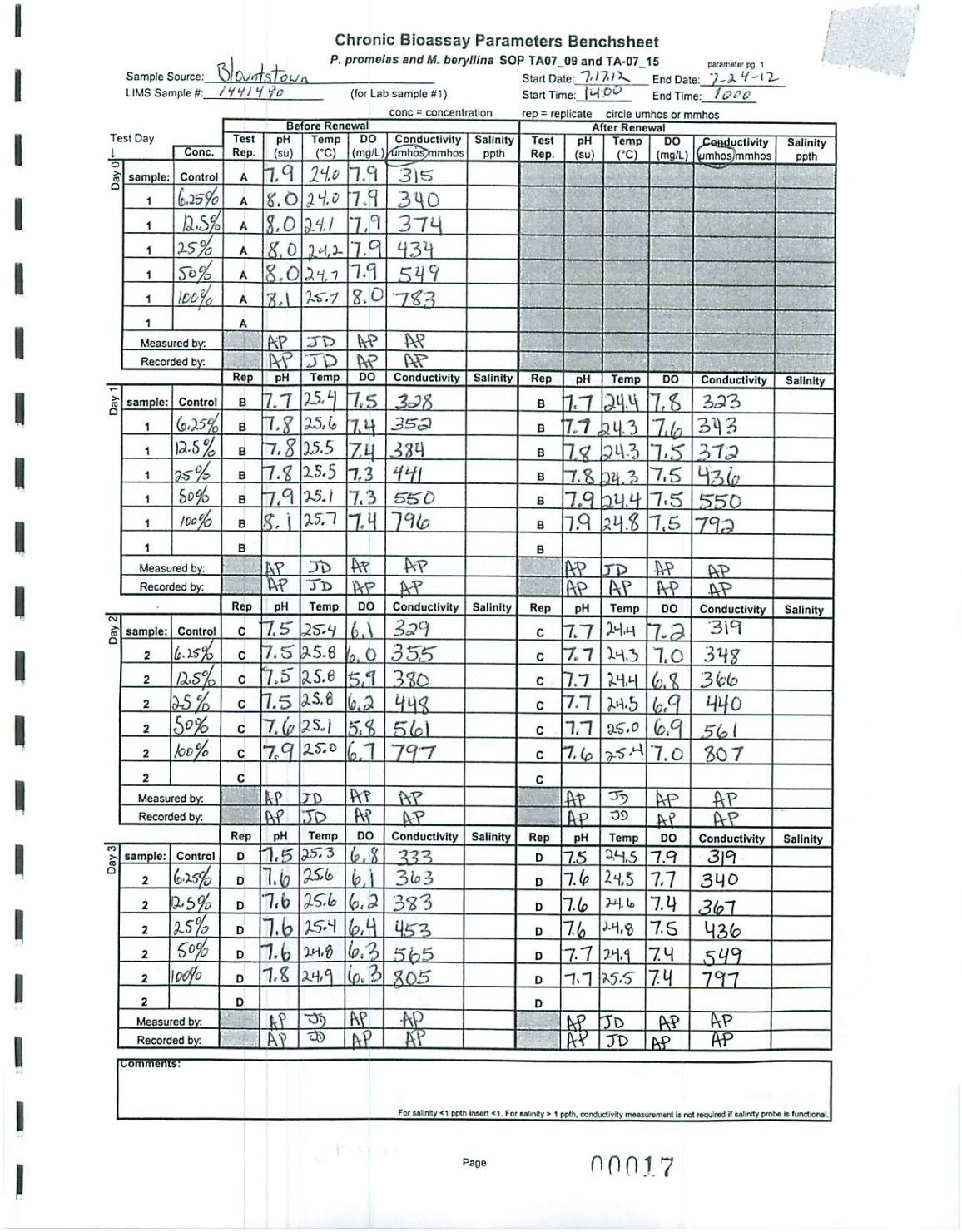
Organism: (*P. promelas*) *M.beryllina* (circle one)

		TEST DAY							
Concentration	Replicate	0	1	2	3	4	5	6	7
Control	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	9 1D	9	9
Sample 6.25 %	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	9 1D
	C	10	10	10	10	10	9 1D	9	9
	D	10	9 1D	9	9	9	9	9	9
Sample 12.5 %	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	9 1D	9	9
	C	10	10	10	10	10	10	10	10
	D	10	10	9 1D	9	9	9	9	9
Sample 25 %	A	10	10	10	10	10	10	3 2D	3
	B	10	10	10	10	9 1D	8 1D	8	8
	C	10	10	10	10	10	10	10	10
	D	10	10	10	10	9 1D	8 1D	8	8
Sample 50 %	A	10	10	10	10	9 1D	9	9	9
	B	10	10	9 1D	9	9	9	9	9
	C	10	10	10	10	9 1D	9	9	9
	D	10	10	10	8 2D	8	8	7 1D	7
Sample 100 %	A	10	10	10	10	10	10	10	10
	B	10	10	10	9 1D	8 1D	7 1D	7	7
	C	10	10	10	10	8 2D	7 1D	7	7
	D	10	10	10	10	10	8 2D	6 3D 7 1D	7
Sample %	A	10							
	B	10							
	C	10							
	D	10							
Loaded by: JD	Checked by:		JD	AP	AP	BA	JD	JD	JD
Verified by: BA									

Comments:
Day 6, 25% Rep A: P.h = 7.4 DO = 5.9 Cond = 424 Temp = 25.3 - Parameters recorded due to abnormal mortality - J.D.

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Appendix B. (continued)



Chronic Bioassay Parameters Benchsheet

P. promelas and M. beryllina SOP TA07_09 and TA-07_15 parameter pg. 1

Sample Source: Blountstown — Start Date: 7.17.12 — End Date: 7-24-12

LIMS Sample #: 1441490 (for Lab sample #1) — Start Time: 1400 — End Time: 1000

conc = concentration — rep = replicate — circle umhos or mmhos

Test Day ↓		Conc.	Before Renewal: Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity umhos mmhos	Salinity ppth	After Renewal: Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity umhos mmhos	Salinity ppth
Day 0	sample:	Control	A	7.9	24.0	7.9	315							
	1	6.25%	A	8.0	24.0	7.9	340							
	1	12.5%	A	8.0	24.1	7.9	374							
	1	25%	A	8.0	24.2	7.9	434							
	1	50%	A	8.0	24.7	7.9	549							
	1	100%	A	8.1	25.7	8.0	783							
	1		A											
	Measured by:			AP	JD	AP	AP							
	Recorded by:			AP	JD	AP	AP							
			Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 1	sample:	Control	B	7.7	25.4	7.5	328		B	7.7	24.4	7.8	323	
	1	6.25%	B	7.8	25.6	7.4	352		B	7.7	24.3	7.6	343	
	1	12.5%	B	7.8	25.5	7.4	384		B	7.8	24.3	7.5	372	
	1	25%	B	7.8	25.5	7.3	441		B	7.8	24.3	7.5	436	
	1	50%	B	7.9	25.1	7.3	550		B	7.9	24.4	7.5	550	
	1	100%	B	8.1	25.7	7.4	796		B	7.9	24.8	7.5	792	
	1		B						B					
	Measured by:			AP	JD	AP	AP			AP	JD	AP	AP	
	Recorded by:			AP	JD	AP	AP			AP	AP	AP	AP	
			Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 2	sample:	Control	C	7.5	25.4	6.1	329		C	7.7	24.4	7.2	319	
	2	6.25%	C	7.5	25.8	6.0	355		C	7.7	24.3	7.0	348	
	2	12.5%	C	7.5	25.8	5.9	380		C	7.7	24.4	6.8	366	
	2	25%	C	7.5	25.8	6.2	448		C	7.7	24.5	6.9	440	
	2	50%	C	7.6	25.1	5.8	561		C	7.7	25.0	6.9	561	
	2	100%	C	7.9	25.0	6.7	797		C	7.6	25.4	7.0	807	
	2		C						C					
	Measured by:			AP	JD	AP	AP			AP	JD	AP	AP	
	Recorded by:			AP	JD	AP	AP			AP	JD	AP	AP	
			Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 3	sample:	Control	D	7.5	25.3	6.8	333		D	7.5	24.5	7.9	319	
	2	6.25%	D	7.6	25.6	6.1	363		D	7.6	24.5	7.7	340	
	2	12.5%	D	7.6	25.6	6.2	383		D	7.6	24.6	7.4	367	
	2	25%	D	7.6	25.4	6.4	453		D	7.6	24.8	7.5	436	
	2	50%	D	7.6	24.8	6.3	565		D	7.7	24.9	7.4	549	
	2	100%	D	7.8	24.9	6.3	805		D	7.7	25.5	7.4	797	
	2		D						D					
	Measured by:			AP	JD	AP	AP			AP	JD	AP	AP	
	Recorded by:			AP	JD	AP	AP			AP	JD	AP	AP	

Comments:

For salinity <1 ppth insert <1. For salinity > 1 ppth, conductivity measurement is not required if salinity probe is functional.

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Appendix B. (continued)

Chronic Bioassay Parameters Benchsheet

P. promelas and M. beryllina SOP TA07_09 and TA-07_15 parameter pg. 2

Sample Source: Blountstown WWTP Start Date: 7.17.12 End Date: 7.24.12

LIMS Sample #: 141490 (for Lab sample #1) Start Time: 14:00 End Time: 1000

conc = concentration rep = replicate

Test Day	Conc.	Before Renewal: Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity (umhos mmhos)	Salinity ppth	After Renewal: Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity (umhos mmhos)	Salinity ppth
Day 4 sample:	Control	A	7.4	25.5	5.8	331		A	7.5	24.6	7.2	325	
3	6.25%	A	7.4	25.4	5.7	352		A	7.4	24.4	7.0	351	
3	12.5%	A	7.4	25.2	6.0	383		A	7.4	24.3	7.2	374	
3	25%	A	7.4	25.3	5.8	444		A	7.4	24.2	7.4	429	
3	50%	A	7.4	25.2	5.3	~~565~~ 565		A	7.4	24.2	7.3	536	
3	100%	A	7.4	25.4	5.2	827		A	7.4	24.2	7.3	757	
3		A						A					
Measured by:			BA	BA	BA	BA			BA	BA	BA	BA	
Recorded by:			BA	BA	BA	BA			BA	BA	BA	BA	
		Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 5 sample:	Control	B	7.5	25.1	6.8	331		B	7.7	25.1	7.8	326	
3	6.25%	B	7.6	25.0	6.7	359		B	7.7	25.0	7.2	347	
3	12.5%	B	7.7	25.4	7.2	382		B	7.8	25.0	7.3	364	
3	25%	B	7.6	25.3	7.2	435		B	7.8	25.0	7.4	418	
3	50%	B	7.7	25.6	7.4	541		B	7.8	25.0	7.6	510	
3	100%	B	7.9	25.7	7.5	758		B	7.8	25.0	7.6	711	
3		B						B					
Measured by:			JD	JD	JD	JD			JD	JD	JD	JD	
Recorded by:			JD	JD	JD	JD			JD	JD	JD	JD	
		Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 6 sample:	Control	C	7.4	25.7	5.5	337		C	7.2	24.9	7.1	317	
3	6.25%	C	7.5	25.9	5.5	366		C	7.3	24.9	6.8	346	
3	12.5%	C	7.5	25.9	5.6	382		C	7.3	24.9	6.6	355	
3	25%	C	7.5	25.6	5.4	436		C	7.3	25.1	6.6	417	
3	50%	C	7.6	25.5	6.7	535		C	7.4	25.3	6.7	507	
3	100%	C	7.7	25.9	6.3	743		C	7.3	25.9	7.9	719	
3		C						C					
Measured by:			AP	JD	AP	AP			JD	JD	JD	JD	
Recorded by:			AP	JD	AP	AP			JD	JD	JD	JD	
		Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 7 sample:	Control	D	7.1	25.8	4.9	332		D					
3	6.25%	D	7.1	25.9	4.6	363		D					
3	12.5%	D	7.1	25.9	4.6	372		D					
3	25%	D	7.1	25.7	4.7	433		D					
3	50%	D	7.1	25.5	4.6	512		D					
3	100%	D	7.1	25.9	5.3	730		D					
3								D					
Measured by:			JD	JD	JD	JD							
Recorded by:			JD	JD	JD	JD							

Comments:

For salinity <1 ppth insert <1. For salinity > 1 ppth, conductivity measurement is not required if salinity probe is functional.

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Appendix B. (continued)

Chronic Bioassay Weighing Benchsheet

Facility: Blountstown WWTP

LIMS Sample Number: 144190
(for Lab Sample # 1)

P. promelas and *M. beryllina* Bench Sheet
SOP TA06_21

Concentration	Replicate	Pan #	Pan wt. g (mean wt = fish wt divided by 10)	Pan + Fish g (convert g to mg: move decimal 3 places to right)	Fish wt. g	Original # Fish	Mean wt. mg	Avg
Control	A	1	0.02304	0.02954	0.0065	10	0.65	
	B	2	0.02291	0.02977	0.00686	10	0.686	
	C	3	0.02239	0.02975	0.00636	10	0.636	0.67
	D	4	0.02260	0.02981	0.00721	10	0.721	
sample 6.25 %	A	5	0.02327	0.02905	0.00578	10	0.578	
	B	6	0.02236	0.02875	0.00591	10	0.591	
	C	7	0.02196	0.02709	0.00513	10	0.513	0.56
	D	8	0.02273	0.02845	0.00572	10	0.572	
sample 12.5 %	A	9	0.02248	0.02841	0.00593	10	0.593	
	B	10	0.02325	0.02898	0.00573	10	0.573	
	C	11	0.02254	0.02838	0.00584	10	0.584	0.56
	D	12	0.02161	0.02678	0.00517	10	0.517	
sample 25 %	A	13	0.02210	0.02364	0.00154	10	0.154	
	B	14	0.02171	0.02695	0.00524	10	0.524	
	C	15	0.02235	0.02832	0.00597	10	0.597	0.45
	D	16	0.02216	0.02753	0.00537	10	0.537	
sample 50 %	A	17	0.02165	0.02800	0.00635	10	0.635	
	B	18	0.02182	0.02830	0.00648	10	0.648	
	C	19	0.02147	0.02806	0.00659	10	0.659	0.617
	D	20	0.02239	0.02766	0.00527	10	0.527	
sample 100 %	A	21	0.02265	0.02999	0.00734	10	0.734	
	B	22	0.02306	0.02797	0.00532	10	0.532	
	C	23	0.02325	0.02861	0.00536	10	0.536	0.598
	D	24	0.02305	0.02794	0.00589	10	0.589	
sample %	A					10		
	B					10		
	C					10		
	D					10		
	Weighed by initials:		AP	AP			revised 7/16/08 mf	

Comments:

Balance: Ohaus 250D Ser# 1125481084
S-Weights: BIO-S-Weights-01

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

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Appendix B. (continued)

Chronic Bioassay Weighing Benchsheet

Quality Control

Facility: Blountstown WWTP

LIMS Sample Number: 144490
(for Lab Sample # 1)

***P. promelas and M. beryllina* Bench sheet**
SOPs TA07_09, TA07_14 and TA06_21

Drying Oven ID:	ER034000
Temperature °C:	100
Hours:	8

Tare weighed by: AP
Final weighed by: AP

Tare Weighing Date: 7-23-12 Final Weighing Date:

			Measured Value (g)		S-weight Value (g)
Tare Pan 1 after Pan 5 (g)	0.02303	@ 0.02304	S-weights	0.01001	@ 0.01
Tare Pan 1 after Pan 10 (g)	0.02303	@ 0.02304	at tare	0.03003	@ 0.03
Tare Pan 1 after Pan 15 (g)	0.02304	@ 0.02304	S-weights	0.01000	@ 0.01
Tare Pan 1 after Pan 20 (g)	0.02302	@ 0.02304	at final	0.05003	@ 0.03
Tare Pan 1 after Pan 25 (g)	0.02305	@ 0.02304			
Tare Pan 1 after Pan 30 (g)		@	Balance: Ohaus 250D Ser# 1125481084		
Tare Pan 1 after Pan 35 (g)		@	S-Weights: BIO-S-Weights-01		
Tare Pan 1 after Pan 40 (g)		@			
Tare Pan 1 after Pan 45 (g)		@			
Tare Pan 1 after Pan 48 (g)		@			
Final Pan 1 after Pan 5 (g)	0.02956	@ 0.02954			
Final Pan 1 after Pan 10 (g)	0.02956	@ 0.02954			
Final Pan 1 after Pan 15 (g)	0.02955	@ 0.02954			
Final Pan 1 after Pan 20 (g)	0.02953	@ 0.02954			
Final Pan 1 after Pan 25 (g)	0.02952	@ 0.02954			
Final Pan 1 after Pan 30 (g)		@			
Final Pan 1 after Pan 35 (g)		@			
Final Pan 1 after Pan 40 (g)		@			
Final Pan 1 after Pan 45 (g)		@			
Final Pan 1 after Pan 48 (g)		@			

Note: Pan numbers (5, 10, etc.) for Tare and Final refers to sequence of weighing as actual Pan #s may differ.

Comments:

revised 7/16/08 MF

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Appendix B. (continued)

Test ID: Bluntstown WWTP Dates: 7-17-2012 7-24-2012

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

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

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

7-26-12 AP

V 1.1 9/21/10 MF/jd

00021

Appendix C. SRT Bench Sheets and Statistical Analysis

Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date:	7/17/2012 11:30	Test ID:	BIntnjul12	Sample ID:	Blountstown chronic July 17 2012
End Date:	7/23/2012 12:10	Lab ID:	DEP TOXLAB-FDEP Biology T	Sample Type:	EFF1-POTW
Sample Date:		Protocol:	EPAF 94-EPA/600/4-91/002	Test Species:	CD-Ceriodaphnia dubia
Comments:	C. dubia chronic for Blountstown WWTP July 17 2012				

Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	24.000	15.000	20.000	19.000	15.000	19.000	23.000	22.000	20.000	22.000
6.25	21.000	16.000	2.000	17.000	18.000	18.000	6.000	20.000	9.000	16.000
12.5	10.000	11.000	8.000	4.000	21.000	4.000	11.000	19.000	15.000	25.000
25	13.000	2.000	5.000	17.000	20.000	21.000	16.000	24.000	10.000	22.000
50	17.000	4.000	14.000	14.000	0.000	17.000	10.000	7.000	7.000	11.000
100	2.000	0.000	16.000	0.000	5.000	1.000	10.000	4.000	5.000	20.000

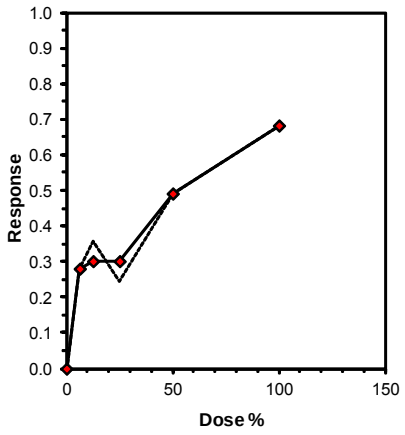
			Transform: Untransformed					Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Mean	N-Mean
D-Control	19.900	1.0000	19.900	15.000	24.000	15.434	10	19.900	1.0000
6.25	14.300	0.7186	14.300	2.000	21.000	44.601	10	14.300	0.7186
12.5	12.800	0.6432	12.800	4.000	25.000	55.341	10	13.900	0.6985
25	15.000	0.7538	15.000	2.000	24.000	49.391	10	13.900	0.6985
50	10.100	0.5075	10.100	0.000	17.000	55.706	10	10.100	0.5075
100	6.300	0.3166	6.300	0.000	20.000	109.729	10	6.300	0.3166

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Kolmogorov D Test indicates normal distribution (p > 0.01)	0.48532	1.035	-0.0519	-0.3763
Bartlett's Test indicates equal variances (p = 0.22)	6.94303	15.0863		

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL		Skew
IC05*	1.110	0.753	0.780	3.536	4.3651
IC10*	2.221	1.226	1.559	6.645	2.4482
IC15*	3.331	2.655	2.339	8.171	5.7294
IC20*	4.442	5.273	3.118	28.155	3.4455
IC25*	5.552	8.185	3.898	32.621	1.9578
IC40	37.895	12.579	6.236	60.029	-0.3126
IC50	51.974				

* indicates IC estimate less than the lowest concentration



Appendix C. (continued)

Larval Fish Growth and Survival Test-7 Day Growth

Start Date:	7/17/2012 14:00	Test ID:	BLTNpp712	Sample ID:	Blountstown P. prom. Chronic
End Date:	7/27/2012 10:00	Lab ID:	DEP TOXLAB-FDEP Biology T	Sample Type:	EFF1-POTW
Sample Date:		Protocol:	EPAF 94-EPA/600/4-91/002	Test Species:	PP-Pimephales promelas
Comments:	P. promelas chronic bioassa for Blountstown WWTP July 17, 2012				

Conc-%	1	2	3	4
D-Control	0.6500	0.6860	0.6360	0.7210
6.25	0.5780	0.6390	0.5130	0.5720
12.5	0.5930	0.5730	0.5840	0.5170
25	0.1540	0.5240	0.5970	0.5370
50	0.6350	0.6480	0.6590	0.5270
100	0.7340	0.4910	0.5360	0.5890

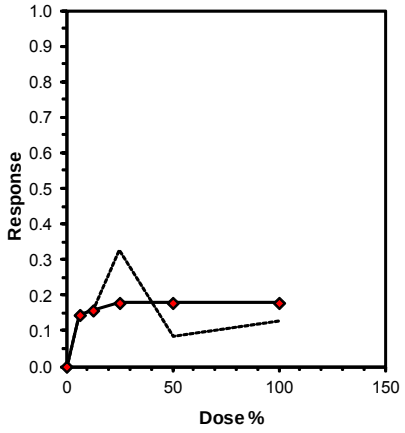
			Transform: Untransformed					Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Mean	N-Mean
D-Control	0.6733	1.0000	0.6733	0.6360	0.7210	5.669	4	0.6733	1.0000
6.25	0.5755	0.8548	0.5755	0.5130	0.6390	8.949	4	0.5755	0.8548
12.5	0.5668	0.8418	0.5668	0.5170	0.5930	6.027	4	0.5668	0.8418
25	0.4530	0.6729	0.4530	0.1540	0.5970	44.559	4	0.5526	0.8208
50	0.6173	0.9168	0.6173	0.5270	0.6590	9.876	4	0.5526	0.8208
100	0.5875	0.8726	0.5875	0.4910	0.7340	17.968	4	0.5526	0.8208

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.88589	0.884	-1.4313	4.77459
Bartlett's Test indicates equal variances (p = 0.02)	13.1881	15.0863		

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL(Exp)		Skew
IC05*	2.1523	0.7722	1.1641	5.4785	1.7801
IC10*	4.3047				
IC15	8.5625				
IC20	>100				
IC25	>100				
IC40	>100				
IC50	>100				

* indicates IC estimate less than the lowest concentration



FDEP Biology Laboratory - Chronic SRT Bench Sheet

Ceriodaphnia dubia

Diluent/ Batch: 20% ~~DMW~~ SDmHw / 7-4-12 Test Days Used: 0-2
SDmHw ~~20% DMW~~ MF / 7-18-12 Test Days Used: 4-5 3mf
Toxicant/ Batch: NaCl / 7-16-12 5g/L

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

Organism: *Ceriodaphnia dubia*
Organism Batch #/ Age: 7-17-12 / <24 hr.
Feeding: Prior to Test and Daily
Food: ☑ YCT ☑ *P. subcapitata*
Food Batch: 5-14-12 4-2-12
Chamber size: 30 mL
Test Volume: 20 mL

Start Date: 7-17-12 Time: 0900
End Date: 7-23-12 Time: 0930

	Batch:	SDmHw 7-4-12	SDmHw 7-18-12			
Water Quality Parameters		MF ~~20% DMW~~ SDmHw	MF 20% DMW SDmHw	Other	Measured by:	Verified by:
Lab Total Residual Cl_2 (mg/L):		<0.03	<0.03		AP	MF
Alkalinity (mg/L as $CaCO_3$):		64	70		AP	MF
Hardness (mg/L as $CaCO_3$):		82	82		AP	MF
Total Ammonia (mg/L as N):		<0.017	<0.017		BA/MF	AP
Conductivity µmhos-cm mmhos-cm :		303	296		MF	AP

Loaded by: MF

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

Test Replicate	Loaded from culture vial
1	A13
2	A15
3	A24
4	A25 MF
5	B4/6
6	C2
7	C5
8	C15
9	C18
10	C20

Results	
Control % CV:	27.3 %
Dunnetts PMSD:	18.2 %
Reproduction NOEC:	<0.312 g/L
Reproduction LOEC:	0.312 g/L
Survival NOEC:	1.25 g/L
Survival LOEC:	2.5 g/L
ICP_{20}:	0.3091 g/L
ICP_{25}:	0.3833 g/L

Comments:

Investigators' signatures

Marshall Faircloth
Bryce Abbuhl
James Daniels
Adrienne Pennington (by M. Fenicle)

Lisa Nelson
REVIEWER

Test Incubated in: Incubator: # 2
Light Intensity : 50 - 100 ft. candles
Photoperiod : 16 light 8 dark
Temperature Range °C:
Incubator # 2 min. 24.7 max. 26.3 mean —
Room B246 ___ min. 24.7 max. 25.3 mean —
Test min. 24.0 max. 25.6 mean —

00037

Appendix C. (continued)

Ceriodaphnia dubia Survival and Reproduction

Start Date: 7-17-12 Time: 0900 Loaded by: MF
End Date: 7-23-12 Time: 0930 Verified by: AP

Concentration	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	Live adults	Neonates per adult
Control	0												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	42 MF 3	4	3	0	3	1	4	3	0		25	10	2.5
	4	0	1 (S)	0	0	2	0	0	0	0	1	3	10	0.3
	5	9	8	4	7	10	7	5	3	7	9	69	10	6.9
	6	10	11	12	12	14	14	X0	12	15	15	115	9	11.5 12.8 MF
	7													
	8													
	Total	23	23	20	22	26	24	6	19	25	25	213	BA ~~9~~ 9	21.3
0.312 g/L	0												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	4	0	4	4	0	3	4	2	4	0	25	10	2.5
	4	0	0	0	0	0	0	0	0	0	1	1	10	0.1
	5	3	7	5	4	9	5	4	7	6	8	58	10	5.8
	6	7	7	9	7	10	10	8	8	10	10	86	10	8.6
	7													
	8													
	Total	14	14	18	15	19	18	16	17	20	19	170	10	17.0
0.625 g/L	0												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	4	0	3	3	3	4	3	1	2	2	25	10	2.5
	4	0	0	0	X	0	0	0	0	0	0	0	9	0
	5	3	3	3	\	5	5	4	3	3	5	34	9	3.4
	6	4	MF ~~7~~ 8	8	\	6	8	8	7	8	9	66	9	6.6
	7				\									
	8				\									
	Total	11	11	14	3	14	17	15	11	13	16	125	9	12.5

Comments: (S) = Split brood

00038

Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Bench Sheet

Ceriodaphnia dubia Survival and Reproduction

Concentration	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total neonates	Live adults	Neonates per adult
1.25 g/L	0												10	
	1												10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	0
	3	3	0	2	3	0	0	2	2	3	0	15	10	1.5
	4	0	0	0	0	0	0	0	0	0	0	0	10	0
	5	3	2	5	2	3	5	8	3	2	4	37	10	3.7
	6	3	4	3	6	3	3	8	4	7	6	47	10	4.7
	7													
	8													
	Total	9	6	10	11	6	8	18	9	12	10	99	10	9.9
2.5 g/L	0												10	
	1												10	
	2	0	X°	0	0	X°	X°	X°	X°	0	0	0	5	0
	3	X°		X°	X°					X°	X°	0	0	0
	4													
	5													
	6													
	7													
	8													
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
5.0 g/L	0												10	
	1	X	X	X	X	X	X	X	X	X	X	0	0	0
	2													
	3													
	4													
	5													
	6													
	7													
	8													
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0

Comments:

00039

Test Page 3 of 6 PAGE 07/15/08 MF

Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Bench Sheet

Ceriodaphnia dubia Parameters

	Test Day 2/7 ↓ Conc.	New Sample Replicate	pH (su)	Temp (°C)	DO (mg/L)	Conductivity (µmhos/cm) (mmhos/cm)	Old Sample Replicate	pH (su)	Temp (°C)	DO (mg/L)	Conductivity (µmhos/cm) (mmhos/cm)
Day 0	Control	M	8.1	25.1	7.7	303					
	0.312 g	M	8.0	25.2	7.5	874					
	0.625 g	M	8.0	25.1	7.4	1469					
	1.25 g	M	7.9	25.2	7.5	2580					
	2.5 g	M	7.9	25.3	7.5	4780					
	5.0 g	M	7.9	25.6	7.4	9010					
	Measured by:		MF	MF	MF	MF					
	Recorded by:		MF	MF	MF	MF					
Day 1	Control	M	8.1	24.4	7.6	311	A	8.1	24.0	7.9	345
	0.312	M	8.1	24.6	7.8	898	A	8.0	24.0	7.6	959
	0.625	M	8.1	24.8	7.9	1607	A	8.0	24.2	7.6	1500
	1.25	M	8.1	24.8	7.8	2640	A	8.0	24.4	7.5	2670
	2.5	M	8.1	24.9	7.8	4780	A	8.0	24.2	7.5	5000
	5.0	M	—	—	—	—	A	8.0	24.1	7.5	9430
	Measured by:		MF	MF	MF	MF		MF	MF	MF	MF
	Recorded by:		MF	MF	MF	MF		MF	MF	MF	MF
Day 2	Control	M	8.0	24.2	7.9	296	A	8.0	24.1	7.7	331
	0.312	M	8.0	24.5	7.8	886	A	8.0	24.1	7.7	919
	0.625	M	8.0	24.6	7.8	1461	A	7.9	24.4	7.7	1612
	1.25	M	8.0	24.6	7.6	2530	A	8.0	24.4	7.7	2670
	2.5	M	8.0	24.7	7.6	4620	A	8.0	24.2	7.7	5020
	—	M					—				
	Measured by:		MF	MF	MF	MF		MF	MF	MF	MF
	Recorded by:		MF	MF	MF	MF		MF	MF	MF	MF
Day 3	Control	M	7.8	24.0	8.0	300	A	7.9	24.2	8.1	345
	0.312	M	7.9	24.0	7.9	870	A	7.9	24.7	8.0	993
	0.625	M	7.9	24.1	7.8	1430	A	7.9	24.9	8.0	1542
	1.25	M	7.9	24.1	7.8	2440	A	7.9	25.0	8.0	2700
	2.5	M	—	24.1	—	—	A	7.9	24.7	8.0	5160
		M									
	Measured by:		MF	MF	MF	MF		MF	MF	MF	MF
	Recorded by:		MF	MF	MF	MF		MF	MF	MF	MF

Comments:

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

00040

Test Page 4 of 6 PAGE 07/15/08 MF

Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Bench Sheet
Ceriodaphnia dubia Parameters

Conc. g/L

Test Day ↓	Conc.	Replicate	New Sample pH (su)	Temp (°C)	DO (mg/L)	Conductivity (µmhos/cm) (mmhos/cm)	Replicate	Old Sample pH (su)	Temp (°C)	DO (mg/L)	Conductivity (µmhos/cm) (mmhos/cm)
Day 4	Control	M	7.7	24.6	~~8.46~~ 7.8	346	A	7.8	25.0	~~8.7~~ 7.9	318
	0.312	M	7.8	24.8 AP	~~849~~ 7.7	849	A	7.8	25.3	7.9	863
	0.625	M	7.8	24.9	~~1426~~ 7.8	1426	A	7.9	25.2	7.8	1451
	1.25	M	7.8	25.0	~~2448~~ 7.7	2440	A	7.9	24.8	7.8	2640
		M									
		M									
	Measured by:		AP	AP	AP	AP		AP	AP	AP	AP
	Recorded by:		AP	AP	AP	AP		AP	AP	AP	AP
Day 5	Control	M	8.2	24.6	7.5	311	A	8.1	24.4	7.3	347
	0.312	M	8.0	24.7	7.4	867	A	7.9	24.6	7.5	941
	0.625	M	8.0	24.8	7.5	1445	A	7.9	24.8	7.7	1539
	1.25	M	8.0	25.0	7.6	2480	A	8.0	24.9	7.7	2680
		M									
		M									
	Measured by:		MF	MF	MF	MF		MF	MF	MF	MF
	Recorded by:		MF	MF	MF	MF		MF	MF	MF	MF
Day 6	Control	M					A	7.8	25.0	7.6	499
	0.312	M					A	7.9	25.0	7.5	709
	0.625	M					A	7.9	25.1	7.5	1435
	1.25	M					A	8.0	24.9	7.6	2480
		M									
		M									
	Measured by:							AP	MF	AP	AP
	Recorded by:							AP	MF	AP	AP
Day 7	Control	M									
		M									
		M									
		M									
		M									
		M									
	Measured by:										
	Recorded by:										
Day 8	Control	M									
		M									
		M									
		M									
		M									
		M									
	Measured by:										
	Recorded by:										

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

Test Page 5 of 6

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07/15/08 MF

Appendix C. (continued)

Test ID: C. dubia Chronic SRT Dates: July 17-23, 2012

METER / DEVICE	ID	SOP	Parameter	Method	v used
YSI Model 58 Dissolved Oxygen Meter	90H0118262	TA06_04	Dissolved Oxygen	SM 4500 O G	✓
YSI DO Probe	5905	TA06_04	Dissolved Oxygen	SM 4500 O G	✓
Accumet AR-10 pH Meter	93312105	TA06_23	pH	SM 4500 H+	✓
Mettler-Toledo SevenMulti Conductivity Meter	SN 1225117049 Probe H04257	TA06_25	Conductivity Salinity	SM 2510 B SM 2520 B	✓
Denver Model 225 ISE with ammonia probe	SN K01377	TA06_17	Ammonia	SM 4500 NH3 F	✓
Traceable Thermometer	#1-SN101686412 #2-SN221295527 #3-SN240116020 #4-SN80361795 #5 SN61990624	TA06_05	Temperature	SM-2530B modified DEP SOP-001/01 FT1400	#5 ✓
Hach Pocket Colorimeter II	05050C026378	TA06_22	Total Residual Chlorine	EPA 330.5 SM 4500 CL G	✓
Alkalinity (Hach Kit)	No SN	TA06_08	Alkalinity	SM 2320 B	✓
Hardness (Hach Kit)	No SN	TA06_09	Hardness	SM 2340 C	✓
OHAUS Balance 250D	1125481084	TA06_21 TA06_27	Weight	-	
S-Weights	BIO-S-WEIGHTS-01	NA	Balance check	-	

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

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

entered by M. Faindeth 7-23-12

V 1.1 9/21/10 MF/jd

000142

Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or *Menidia beryllina*

Test Species (circle one)

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

Diluent/ Batch: MHW/7.17.12 Test Days Used: 0 - 6

Diluent/ Batch: _____ Test Days Used: _____

Toxicant/ Batch # : KCl / 7.17.12

Artemia Lot # : OBB/2

Start Date: 7.17.12 Time: 13:45

End Date: 7.24.12 Time: 0900

Organism Batch #/ Age: 7.17.12 / Hatch 5 <24 hrs JD

Artemia Batch #		Day 2	97-12	Day 5	100-12
Day 0	95-12	Day 3	98-12	Day 6	101-12
Day1	96-12	Day 4	99-12		

Chamber size : 1000 ml

Test volume : 500 ml

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

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

Water Quality Parameters	Diluent	Diluent (or other)	Method	Measured by	Verified by
Total Residual Cl_2 (mg/L):	<0.03		HACH	AP	JD
Alkalinity (mg/L as $CaCO_3$):	71		HACH	AP	JD
Hardness (mg/L as $CaCO_3$):	85		HACH	AP	JD
Total Ammonia (mg/L as N):	<0.017		DENVER	BA	AP
Conductivity (µmhos-cm) mmhos-cm:	36.4		METTLER	AP	JD

Statistics	
Growth NOEC:	0.25 g/L
Growth LOEC:	0.5 g/L
Growth IC_{20}:	0.306
Growth IC_{25}:	0.345
Ctrl % CV:	15.5%
Dunnetts PMSD:	22.6%
Survival NOEC:	0.25 g/L
Survival LOEC:	0.5 g/L

Test incubated in : [X] Incubator # 3

[ ] Waterbath #____

Light Intensity : 50 - 100 ft. candles

Photoperiod : 16 light 8 dark

Temperature Range °C:

Incubator # 3 min. 24.7 max. 26.0 mean –

Water bath # ____ min.____ max.____ mean____

Room B246 min. 25.2 max. 26.1 mean –

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

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

Investigators' signatures

James Daniel

Brieune Pennington

James Daniel

Brent Nall

Kristy Miller

REVIEWER

Comments:

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Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or Menidia beryllina Survival

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

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

			TEST DAY							
Concentration	Replicate	Chamber	0	1	2	3	4	5	6	7
Control	A	C1	10	10	10	10	10	10	10	10
	B	C2	10	10	10	10	10	10	10	10
	C	C3	10	10	10	10	10	10	10	10
	D	C4	10	9 ID	9	9	9	9	9	9
0.125	A	C5	10	10	10	10	10	10	10	9 ID
	B	C6	10	10	10	10	10	10	9 ID	9
	C	C7	10	10	10	10	10	10	10	10
	D	C8	10	10	9 ID	9	9	9	9	9
0.25	A	C9	10	10	10	10	10	10	9 ID	9
	B	C10	10	10	10	9 ID	9	9	9	9
	C	C11	10	10	10	9 ID	9	9	9	8 ID
	D	C12	10	9 ID	9	9	9	9	9	9
0.5	A	C13	10	9 ID	8 ID	7 ID	7	7	7	7
	B	C14	10	9 ID	8 ID	8	8	8	8	8
	C	C15	10	~~8 ID~~	8	8	8	8	~~4 ID~~	7
	D	C16	10	6 ID	6	5 ID	5	5	4 ID	4
1.0	A	C17	10	0 DD	—	—	—	—	—	—
	B	C18	10	1 ID	0 ID	—	—	—	—	—
	C	C19	10	1 ID	1	1	1	1	1	1
	D	C20	10	1 ID	1	0 ID	—	—	—	—
2.0	A	C21	10	0 DD						
	B	C22	10	0 DD						
	C	C23	10	0 DD						
	D	C24	10	0 DD						
	A		10							
	B		10							
	C		10							
	D		10							
Loaded by (0 hr): JD		Checked by:		JD	AP	JD	BA	JD	JD	JD
Verified by (0 hr): BA										
Concentrations prepared by:				JD	JD	JD	JD	JD	JD	JD

Comments:

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Appendix C. (continued)

Chronic SRT Parameters Benchsheet

P. promelas and M. beryllina SOP TA07_09 and TA-07_15 parameter pg. 1

Start Date: 7.17.12 End Date: 7-24-12

Start Time: 13:45 End Time: 0900

conc = concentration rep = replicate circle umhos or mmhos

Test Day	Conc.	Before Renewal: Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity umhos mmhos	Salinity ppth	After Renewal: Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity umhos mmhos	Salinity ppth
Day 0	Control	A	7.9	24.0	8.1	364							
	0.125	A	7.9	24.0	8.0	481							
	0.25	A	8.0	24.1	8.0	754							
	0.5	A	8.0	24.3	8.0	1276							
	1.0	A	8.1	24.4	8.1	2230							
	2.0	A	8.1	25.2	8.0	4070							
		A											
	Measured by		AP	JD	AP	AP							
	Recorded by		AP	AP	AP	AP							
		Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 1	Control	B	7.6	24.9	7.6	336		B	7.7	24.2	7.8	315	
	.125	B	7.7	24.4	7.5	501		B	7.8	24.2	7.6	491	
	.25	B	7.7	24.6	7.4	769		B	7.8	24.3	7.6	762	
	.5	B	7.8	24.9	7.5	1308		B	7.9	24.5	7.5	1255	
	1.0	B	7.8	24.6	7.4	2230		B	7.9	24.7	7.6	2240	
	2.0	B	7.9	25.5	7.6	4070		B					
		B						B					
	Measured by		AP	JD	AP	AP			AP	JD	AP	AP	
	Recorded by		AP	JD	AP	AP			AP	AP	AP	AP	
		Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 2	Control	C	7.5	24.6	7.1	356		C	7.7	24.4	7.6	316	
	.125	C	7.6	24.0	6.7	505		C	7.7	24.2	7.4	537	
	.25	C	7.6	24.1	6.5	783		C	7.8	24.3	7.3	726	
	.5	C	7.6	24.3	6.6	1286		C	7.8	24.4	7.3	1288	
	1.0	C	7.7	24.6	6.6	2320		C	7.9	24.6	7.3	2130	
		C						C					
		C						C					
	Measured by		AP	JD	AP	AP			AP	JD	AP	AP	
	Recorded by		AP	JD	AP	AP			AP	JD	AP	AP	
		Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 3	Control	D	7.6	24.4	7.2	331		D	7.8	24.3	7.6	328	
	.125	D	7.6	24.2	6.7	557		D	7.8	24.3	7.4	540	
	.25	D	7.6	24.4	6.8	753		D	7.8	24.4	7.5	745	
	.5	D	7.7	24.4	6.8	1330		D	7.9	24.5	7.5	1264	
	1.0	D	7.7	25.2	6.8	2200		D	8.0	24.9	7.5	2230	
		D						D					
		D						D					
	Measured by		AP	JD	AP	AP			AP	JD	AP	AP	
	Recorded by		AP	JD	AP	AP			AP	JD	AP	AP	

Comments:

For salinity <1 ppth insert <1. For salinity > 1 ppth, conductivity measurement is not required if salinity probe is functional.

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Appendix C. (continued)

Chronic SRT Parameters Benchsheet

P. promelas and M. beryllina SOP TA07_09 and TA-07_15 parameter pg. 2

Start Date: 7.17.12 End Date: 7.24.12

Start Time: 13:45 End Time: 0900

conc = concentration rep = replicate

Test Day		Before Renewal							After Renewal						
	Conc.	Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity umhos mmhos	Salinity ppth		Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity umhos mmhos	Salinity ppth	
Day 4	Control	A	7.3	24.9	5.7	328			A	7.3	25.1	7.7	320		
	0.125	A	7.3	24.8	5.9	553			A	7.4	25.0	7.5	552		
	0.25	A	7.3	25.0	5.8	761			A	7.4	24.9	7.5	793		
	0.5	A	7.3	24.5	5.8	1279			A	7.4	24.9	7.4	1284		
	1.0	CA	7.4	24.2	5.8	2210			A	7.4	24.8	7.3	2360		
		A							A						
		A							A						
	Measured by		BA	BA	BA	BA				BA	BA	BA	BA	—	
	Recorded by		BA	BA	BA	BA				BA	BA	BA	BA	—	
		Rep	pH	Temp	DO	Conductivity	Salinity		Rep	pH	Temp	DO	Conductivity	Salinity	
Day 5	Control	B	8.0	24.8	7.1	327			B	7.9	25.3	7.5	323		
	0.125	B	7.9	24.7	7.1	556			B	7.9	25.2	7.4	561		
	0.25	B	7.9	24.1	7.1	780			B	7.9	25.1	7.4	759		
	0.5	B	7.9	24.8	7.4	1301			B	7.9	25.1	7.5	1291		
	1.0	CB JD	7.9	24.0	7.2	2390			JD BC	7.9	25.1	7.5	JD 2120		
		B							B						
		B							B						
	Measured by		JD	JD	JD	JD				JD	JD	JD	JD		
	Recorded by		JD	JD	JD	JD				JD	JD	JD	JD		
		Rep	pH	Temp	DO	Conductivity	Salinity		Rep	pH	Temp	DO	Conductivity	Salinity	
Day 6	Control	C	7.4	24.3	6.5	373			C	7.2	24.9	7.3	309		
	0.125	C	7.5	24.7	6.4	567			C	7.3	24.8	7.0	478		
	0.25	C	7.5	24.3	6.2	801			C	7.4	24.8	7.0	701		
	0.5	C	7.6	24.3	6.1	1099			C	7.6	24.9	7.1	1200		
	1.0	C	7.6	24.3	6.8	2140			C	7.7	25.2	7.2	1957		
		C							C						
		C							C						
	Measured by		AP	JD	AP	AP				JD	JD	JD	JD		
	Recorded by		AP	JD	AP	AP				JD	JD	JD	JD		
		Rep	pH	Temp	DO	Conductivity	Salinity		Rep	pH	Temp	DO	Conductivity	Salinity	
Day 7	Control	D	7.3	24.5	5.5	328			D						
	0.125	D	7.2	24.6	5.4	528			D						
	0.25	D	7.2	24.7	5.2	744			D						
	0.5	D	7.2	24.6	4.8	1255			D						
	1.0	JD BC	7.3	25.1	7.4	1747			D						
		D							D						
		D							D						
	Measured by		JD	JD	JD	JD									
	Recorded by		JD	JD	JD	JD									

For salinity <1 ppth insert <1. For salinity > 1 ppth, conductivity measurement is not required if salinity probe is functional.

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Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or *Menidia beryllina* Weights

SOP TA06_21

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

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

mean wt = fish wt divided by 10

convert g to mg: move decimal 3 places to right

Concentration	Replicate	Pan #	Pan wt. (g)	Pan + Fish (g)	Fish wt. (g)	Original # of fish	Mean wt. (mg)	Avg.
Control	A	25	0.02345	0.02948	0.00603	10	0.603	
	B	26	0.02201	0.02904	0.00703	10	0.703	0.745
	C	27	0.02214	0.03023	0.00809	10	0.809	
	D	28	0.03256	0.03120	0.00864	10	0.864	
0.125	A	29	0.02230	0.02837	0.00607	10	0.607	
	B	30	0.02225	0.02852	0.00627	10	0.627	0.671
	C	31	0.02272	0.03029	0.00757	10	0.757	
	D	32	0.02226	0.02918	0.00692	10	0.692	
0.25	A	33	0.02265	0.02958	0.00693	10	0.693	
	B	34	0.02161	0.02915	0.00754	10	0.754	
	C	35	0.02192	0.02644	0.00452	10	0.452	0.648
	D	36	0.02160	0.02854	0.00694	10	0.694	
0.5	A	37	0.02172	0.02673	0.00501	10	0.501	
	B	38	0.02143	0.02632	0.00489	10	0.489	
	C	39	0.02189	0.02613	0.00424	10	0.424	0.413
	D	40	0.02162	0.02398	0.00236	10	0.236	
1.0	A	41	0.02218	0.02220	0.00002	10	0.002	
	B					10		0.002
	C					10		
	D					10		
	A					10		
	B					10		
	C					10		
	D					10		
	A					10		
	B					10		
	C					10		
	D					10		
		Weighed by:	AP	AP				

Comments:

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

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revised 8/24/06 MF/SP

Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or *Menidia beryllina* QC

SOPs TA07_09, TA07_14 and TA06_21

all weights in grams

Empty Pan Weights Date: 7-23-12 Weighed by: AP

	Pan 1 wt.	Pan 1 initial wt.
after Pan 5	0.02344	@ 0.02345
after Pan 10	0.02344	@ 0.02345
after Pan 15	0.02348	@ 0.02345
after Pan 20	0.02344	@ 0.02345
after Pan 25		@
after Pan 30		@
after Pan 35		@
after Pan 40		@
after Pan 45		@
after Pan 48		@

	Measured Value	S-weight Value
S-weights	0.01001	@ 0.01
	0.03003	@ 0.03

Balance: Ohaus 250D Ser# 1125481084

S-Weights: BIO-S-Weights-01

Fish + Pan Weights Date: 7-25-12 Weighed by: AP

	Pan 1 wt.	Pan 1 initial wt.
after Pan 5	0.02947	@ 0.02948
after Pan 10	0.02946	@ 0.02948
after Pan 15	0.02945	@ 0.02948
after Pan 20	0.02948	@ 0.02948
after Pan 25		@
after Pan 30		@
after Pan 35		@
after Pan 40		@
after Pan 45		@
after Pan 48		@

	Measured Value	S-weight Value
S-weights	0.01000	@ 0.01
	0.05003	@ 0.05

Drying Oven ID: ERC34000

Temperature °C: 100

Drying Hours: 8

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

Comments:

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revised 7/16/08 MF

Appendix C. (continued)

Test ID: P. promelas chronic SRT Dates: 7/17/12 - 7/24/12

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

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

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

7-25-12 AP

V 1.1 9/21/10 MF/jd

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Appendix C. (continued)

Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date:	7/17/2012 11:30	Test ID:	Blntnjul12	Sample ID:	Blountstown chronic July 17 2012
End Date:	7/23/2012 12:10	Lab ID:	DEP TOXLAB-FDEP Biology T	Sample Type:	EFF1-POTW
Sample Date:		Protocol:	EPAF 94-EPA/600/4-91/002	Test Species:	CD-Ceriodaphnia dubia
Comments:	C. dubia chronic for Blountstown WWTP July 17 2012				

Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	24.000	15.000	20.000	19.000	15.000	19.000	23.000	22.000	20.000	22.000
6.25	21.000	16.000	2.000	17.000	18.000	18.000	6.000	20.000	9.000	16.000
12.5	10.000	11.000	8.000	4.000	21.000	4.000	11.000	19.000	15.000	25.000
25	13.000	2.000	5.000	17.000	20.000	21.000	16.000	24.000	10.000	22.000
50	17.000	4.000	14.000	14.000	0.000	17.000	10.000	7.000	7.000	11.000
100	2.000	0.000	16.000	0.000	5.000	1.000	10.000	4.000	5.000	20.000

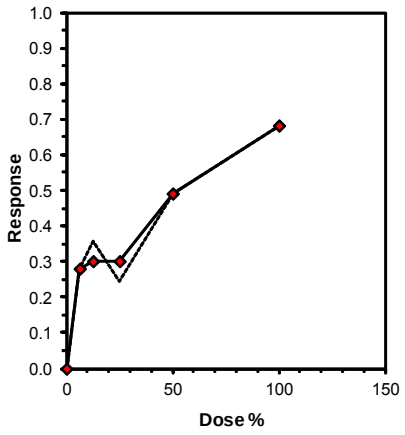
			Transform: Untransformed					Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Mean	N-Mean
D-Control	19.900	1.0000	19.900	15.000	24.000	15.434	10	19.900	1.0000
6.25	14.300	0.7186	14.300	2.000	21.000	44.601	10	14.300	0.7186
12.5	12.800	0.6432	12.800	4.000	25.000	55.341	10	13.900	0.6985
25	15.000	0.7538	15.000	2.000	24.000	49.391	10	13.900	0.6985
50	10.100	0.5075	10.100	0.000	17.000	55.706	10	10.100	0.5075
100	6.300	0.3166	6.300	0.000	20.000	109.729	10	6.300	0.3166

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Kolmogorov D Test indicates normal distribution (p > 0.01)	0.48532	1.035	-0.0519	-0.3763
Bartlett's Test indicates equal variances (p = 0.22)	6.94303	15.0863		

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL		Skew
IC05*	1.110	0.753	0.780	3.536	4.3651
IC10*	2.221	1.226	1.559	6.645	2.4482
IC15*	3.331	2.655	2.339	8.171	5.7294
IC20*	4.442	5.273	3.118	28.155	3.4455
IC25*	5.552	8.185	3.898	32.621	1.9578
IC40	37.895	12.579	6.236	60.029	-0.3126
IC50	51.974				

* indicates IC estimate less than the lowest concentration



Appendix C. (continued)

Larval Fish Growth and Survival Test-7 Day Growth

Start Date:	7/17/2012 14:00	Test ID:	BLTNpp712	Sample ID:	Blountstown P. prom. Chronic
End Date:	7/27/2012 10:00	Lab ID:	DEP TOXLAB-FDEP Biology T	Sample Type:	EFF1-POTW
Sample Date:		Protocol:	EPAF 94-EPA/600/4-91/002	Test Species:	PP-Pimephales promelas
Comments:	P. promelas chronic bioassa for Blountstown WWTP July 17, 2012				

Conc-%	1	2	3	4
D-Control	0.6500	0.6860	0.6360	0.7210
6.25	0.5780	0.6390	0.5130	0.5720
12.5	0.5930	0.5730	0.5840	0.5170
25	0.1540	0.5240	0.5970	0.5370
50	0.6350	0.6480	0.6590	0.5270
100	0.7340	0.4910	0.5360	0.5890

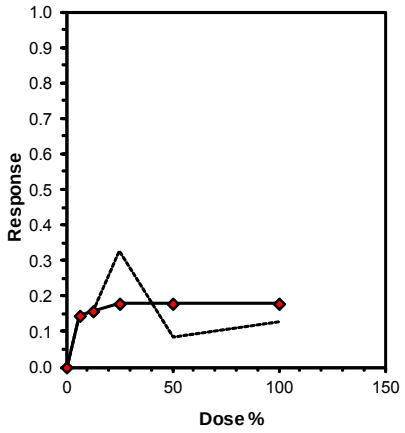
			Transform: Untransformed					Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Mean	N-Mean
D-Control	0.6733	1.0000	0.6733	0.6360	0.7210	5.669	4	0.6733	1.0000
6.25	0.5755	0.8548	0.5755	0.5130	0.6390	8.949	4	0.5755	0.8548
12.5	0.5668	0.8418	0.5668	0.5170	0.5930	6.027	4	0.5668	0.8418
25	0.4530	0.6729	0.4530	0.1540	0.5970	44.559	4	0.5526	0.8208
50	0.6173	0.9168	0.6173	0.5270	0.6590	9.876	4	0.5526	0.8208
100	0.5875	0.8726	0.5875	0.4910	0.7340	17.968	4	0.5526	0.8208

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.88589	0.884	-1.4313	4.77459
Bartlett's Test indicates equal variances (p = 0.02)	13.1881	15.0863		

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL(Exp)		Skew
IC05*	2.1523	0.7722	1.1641	5.4785	1.7801
IC10*	4.3047				
IC15	8.5625				
IC20	>100				
IC25	>100				
IC40	>100				
IC50	>100				

* indicates IC estimate less than the lowest concentration



Appendix D. Test Organism Receipt

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Shipping Date: 7/16/12

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						
Pimephales promelas	550	< 24 Hrs	FM120715-1620	25	7.8	80
Ceriodaphnia dubia						
Daphnia magna						
YCT						
P. subcapitata						

Packed by: PM

Shipped Via: Fed Ex

Notes: _____

Thank you for your order.

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

Appendix E. Chemical Analyses performed on the effluent from the Blountstown WWTF Outfall D-001, sampled on July 16, 18, and 20, 2012.

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
7/16/2012 8:00	Effluent EFF-01	AGP/LN	Algal Growth Potential	73.4	A	mg DryWt/L	0.3	0.9
7/16/2012 8:00	Effluent EFF-01	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	1.7	IQ	mg/L	0.2	2
7/16/2012 8:00	Effluent EFF-01	Chlorophyll/Grain Size/BOD	Phaeophytin-a	1.6		ug/L	0.4	1.2
7/16/2012 8:00	Effluent EFF-01	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	8		ug/L	0.55	1.7
7/16/2012 8:00	Effluent EFF-01	Metals	Silver	0.025	U	ug/L	0.025	0.1
7/16/2012 8:00	Effluent EFF-01	Metals	Copper	1	I	ug/L	0.5	1
7/16/2012 8:00	Effluent EFF-01	Metals	Nickel	1.02		ug/L	0.25	1
7/16/2012 8:00	Effluent EFF-01	Metals	Calcium	35.6		mg/L	0.075	0.3
7/16/2012 8:00	Effluent EFF-01	Metals	Zinc	22		ug/L	5	20
7/16/2012 8:00	Effluent EFF-01	Metals	Iron	30	U	ug/L	30	120
7/16/2012 8:00	Effluent EFF-01	Metals	Arsenic	0.25	U	ug/L	0.25	1
7/16/2012 8:00	Effluent EFF-01	Metals	Chromium	0.3	U	ug/L	0.3	1.2
7/16/2012 8:00	Effluent EFF-01	Metals	Magnesium	17.2		mg/L	0.04	0.16
7/16/2012 8:00	Effluent EFF-01	Metals	Selenium	0.2	U	ug/L	0.2	0.8
7/16/2012 8:00	Effluent EFF-01	Metals	Lead	0.2	U	ug/L	0.2	0.8
7/16/2012 8:00	Effluent EFF-01	Metals	Sodium	87.4		mg/L	0.5	2
7/16/2012 8:00	Effluent EFF-01	Metals	Cadmium	0.05	U	ug/L	0.05	0.2
7/16/2012 8:00	Effluent EFF-01	Metals	Aluminum	90		ug/L	5	20
7/16/2012 8:00	Effluent EFF-01	Nutrients	NO2NO3-N	1.6		mg N/L	0.04	0.1
7/16/2012 8:00	Effluent EFF-01	Nutrients	Ammonia-N	0.041		mg N/L	0.01	0.02
7/16/2012 8:00	Effluent EFF-01	Nutrients	Kjeldahl Nitrogen	0.72		mg N/L	0.08	0.2
7/16/2012 8:00	Effluent EFF-01	Nutrients	Organic Carbon	3.4	I	mg C/L	1	5
7/16/2012 8:00	Effluent EFF-01	Nutrients	Chloride	100		mg Cl/L	0.4	1
7/16/2012 8:00	Effluent EFF-01	Nutrients	O-Phosphate-P	0.062		mg P/L	0.004	0.01
7/16/2012 8:00	Effluent EFF-01	Nutrients	Fluoride	0.66		mg F/L	0.035	0.1
7/16/2012 8:00	Effluent EFF-01	Nutrients	Total-P	0.13		mg P/L	0.005	0.05
7/16/2012 8:00	Effluent EFF-01	Nutrients	TSS	3	I	mg/L	2	10
7/16/2012 8:00	Effluent EFF-01	Nutrients	Sulfate	94		mg SO4/L	0.4	1
7/16/2012 8:00	Effluent EFF-01	Nutrients	Alkalinity	111		mg CaCO3/L	0.65	2.5
7/16/2012 8:00	Effluent EFF-01	Pesticides	Parathion Ethyl	0.11	UJ	ug/L	0.11	0.43
7/16/2012 8:00	Effluent EFF-01	Pesticides	Norflurazon	0.16	U	ug/L	0.16	0.65
7/16/2012 8:00	Effluent EFF-01	Pesticides	Prometryn	0.11	U	ug/L	0.11	0.43
7/16/2012 8:00	Effluent EFF-01	Pesticides	Naled	0.22	UJ	ug/L	0.22	0.87
7/16/2012 8:00	Effluent EFF-01	Pesticides	Fenamiphos	0.16	U	ug/L	0.16	0.65
7/16/2012 8:00	Effluent EFF-01	Pesticides	Phorate	0.027	U	ug/L	0.027	0.11

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
7/16/2012 8:00	Effluent EFF-01	Pesticides	Fonofos	0.054	U	ug/L	0.054	0.22
7/16/2012 8:00	Effluent EFF-01	Pesticides	Chlorpyrifos Ethyl	0.054	U	ug/L	0.054	0.22
7/16/2012 8:00	Effluent EFF-01	Pesticides	Butylate	0.11	U	ug/L	0.11	0.43
7/16/2012 8:00	Effluent EFF-01	Pesticides	Simazine	0.054	U	ug/L	0.054	0.22
7/16/2012 8:00	Effluent EFF-01	Pesticides	Mevinphos	0.054	U	ug/L	0.054	0.22
7/16/2012 8:00	Effluent EFF-01	Pesticides	Metolachlor	0.33	U	ug/L	0.33	1.3
7/16/2012 8:00	Effluent EFF-01	Pesticides	Metalaxyl	0.22	U	ug/L	0.22	0.87
7/16/2012 8:00	Effluent EFF-01	Pesticides	Azinphos Methyl	0.11	UJ	ug/L	0.11	0.43
7/16/2012 8:00	Effluent EFF-01	Pesticides	Alachlor	0.33	U	ug/L	0.33	1.3
7/16/2012 8:00	Effluent EFF-01	Pesticides	Parathion Methyl	0.054	U	ug/L	0.054	0.22
7/16/2012 8:00	Effluent EFF-01	Pesticides	Ethion	0.054	U	ug/L	0.054	0.22
7/16/2012 8:00	Effluent EFF-01	Pesticides	Ametryn	0.054	U	ug/L	0.054	0.22
7/16/2012 8:00	Effluent EFF-01	Pesticides	Hexazinone	0.16	U	ug/L	0.16	0.65
7/16/2012 8:00	Effluent EFF-01	Pesticides	Ethoprop	0.027	U	ug/L	0.027	0.11
7/16/2012 8:00	Effluent EFF-01	Pesticides	Diazinon	0.054	U	ug/L	0.054	0.22
7/16/2012 8:00	Effluent EFF-01	Pesticides	Atrazine	0.054	U	ug/L	0.054	0.22
7/16/2012 8:00	Effluent EFF-01	Pesticides	Metribuzin	0.11	U	ug/L	0.11	0.43
7/16/2012 8:00	Effluent EFF-01	Pesticides	Chlorpyrifos Methyl	0.054	U	ug/L	0.054	0.22
7/16/2012 8:00	Effluent EFF-01	Pesticides	Bromacil	0.22	U	ug/L	0.22	0.87
7/16/2012 8:00	Effluent EFF-01	Pesticides	Malathion	0.054	U	ug/L	0.054	0.22
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	2,4-Dimethylphenol	10	U	ug/L	10	41
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	2,4-Dinitrophenol	15	U	ug/L	15	62
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	2,6-Dinitrotoluene	1	U	ug/L	1	4.1
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	62
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Benzo(a)anthracene	0.21	U	ug/L	0.21	0.82
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Benzo(k)fluoranthene	0.21	U	ug/L	0.21	0.82
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.1	U	ug/L	3.1	12
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Hexachloroethane	3.1	U	ug/L	3.1	12
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.1	U	ug/L	2.1	8.2
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	2,4-Dinitrotoluene	1	U	ug/L	1	4.1
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1	U	ug/L	1	4.1
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	2-Chlorophenol	1	U	ug/L	1	4.1
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1	U	ug/L	3.1	12
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Butyl benzyl phthalate	5.2	U	ug/L	5.2	21
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1	U	ug/L	1	4.1
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Acenaphthene	0.21	U	ug/L	0.21	0.82
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Benzidine	100	UJ	ug/L	100	410
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Di-n-octyl phthalate	1	U	ug/L	1	4.1

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Hexachlorobenzene	1	U	ug/L	1	4.1
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Hexachlorobutadiene	3.1	U	ug/L	3.1	12
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Isophorone	1	U	ug/L	1	4.1
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1	U	ug/L	2.1	8.2
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Phenanthrene	0.21	U	ug/L	0.21	0.82
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1	U	ug/L	1	4.1
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Acenaphthylene	0.21	U	ug/L	0.21	0.82
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1	U	ug/L	1	4.1
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Chrysene	0.21	U	ug/L	0.21	0.82
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Diethyl phthalate	1	UJ	ug/L	1	4.1
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Fluorene	0.21	U	ug/L	0.21	0.82
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.1	U	ug/L	3.1	12
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Naphthalene	0.21	U	ug/L	0.21	0.82
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Nitrobenzene	2.1	U	ug/L	2.1	8.2
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	2,4,6-Trichlorophenol	1	U	ug/L	1	4.1
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	2,4-Dichlorophenol	1	U	ug/L	1	4.1
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Anthracene	0.21	U	ug/L	0.21	0.82
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Benzo(a)pyrene	0.21	U	ug/L	0.21	0.82
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	15	U	ug/L	15	62
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Fluoranthene	0.21	U	ug/L	0.21	0.82
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.1	U	ug/L	3.1	12
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Pentachlorophenol	3.1	U	ug/L	3.1	12
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Phenol	1	U	ug/L	1	4.1
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Pyrene	0.21	U	ug/L	0.21	0.82
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	2-Chloronaphthalene	1	U	ug/L	1	4.1
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	2-Nitrophenol	1	U	ug/L	1	4.1
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Benzo(b)fluoranthene	0.21	U	ug/L	0.21	0.82
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.21	U	ug/L	0.21	0.82
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Dimethyl phthalate	10	U	ug/L	10	41
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	3,3'-Dichlorobenzidine	41	U	ug/L	41	160
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	4-Chloro-3-methylphenol	1	U	ug/L	1	4.1
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.1	U	ug/L	2.1	8.2
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Di-n-butyl phthalate	5.2	U	ug/L	5.2	21
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.21	U	ug/L	0.21	0.82
7/16/2012 8:00	Effluent EFF-01	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.21	U	ug/L	0.21	0.82
7/16/2012 12:30	EFF-01	Overflow	Fecal Coliforms-Membrane Filter	96		cfu/100 mL	4	
7/16/2012 13:00	Field Blank	Metals	Magnesium	0.04	U	mg/L	0.04	0.16
7/16/2012 13:00	Field Blank	Metals	Aluminum	5	U	ug/L	5	20

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
7/16/2012 13:00	Field Blank	Metals	Iron	30	U	ug/L	30	120
7/16/2012 13:00	Field Blank	Metals	Arsenic	0.25	U	ug/L	0.25	1
7/16/2012 13:00	Field Blank	Metals	Zinc	5	U	ug/L	5	20
7/16/2012 13:00	Field Blank	Metals	Calcium	0.075	U	mg/L	0.075	0.3
7/16/2012 13:00	Field Blank	Metals	Silver	0.025	U	ug/L	0.025	0.1
7/16/2012 13:00	Field Blank	Metals	Lead	0.2	U	ug/L	0.2	0.8
7/16/2012 13:00	Field Blank	Metals	Copper	0.5	U	ug/L	0.5	1
7/16/2012 13:00	Field Blank	Metals	Chromium	0.3	U	ug/L	0.3	1.2
7/16/2012 13:00	Field Blank	Metals	Nickel	0.25	U	ug/L	0.25	1
7/16/2012 13:00	Field Blank	Metals	Selenium	0.2	U	ug/L	0.2	0.8
7/16/2012 13:00	Field Blank	Metals	Sodium	0.5	U	mg/L	0.5	2
7/16/2012 13:00	Field Blank	Metals	Cadmium	0.05	U	ug/L	0.05	0.2
7/16/2012 13:00	Field Blank	Nutrients	Total-P	0.004	U	mg P/L	0.004	0.01
7/16/2012 13:00	Field Blank	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
7/16/2012 13:00	Field Blank	Nutrients	Organic Carbon	1	U	mg C/L	1	5
7/16/2012 13:00	Field Blank	Nutrients	NO2NO3-N	0.004	U	mg N/L	0.004	0.01
7/16/2012 13:00	Field Blank	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
7/16/2012 13:00	Field Blank	Nutrients	Alkalinity	0.65	U	mg CaCO3/L	0.65	2.5
7/16/2012 13:00	Field Blank	Nutrients	Chloride	0.2	U	mg Cl/L	0.2	0.5
7/16/2012 13:00	Field Blank	Nutrients	Kjeldahl Nitrogen	0.08	U	mg N/L	0.08	0.2
7/16/2012 13:00	Field Blank	Nutrients	Fluoride	0.035	U	mg F/L	0.035	0.1
7/16/2012 13:00	Field Blank	Nutrients	Sulfate	0.2	U	mg SO4/L	0.2	0.5
7/16/2012 13:00	Field Blank	Pesticides	Metolachlor	0.33	U	ug/L	0.33	1.3
7/16/2012 13:00	Field Blank	Pesticides	Mevinphos	0.056	U	ug/L	0.056	0.22
7/16/2012 13:00	Field Blank	Pesticides	Azinphos Methyl	0.11	UJ	ug/L	0.11	0.44
7/16/2012 13:00	Field Blank	Pesticides	Bromacil	0.22	U	ug/L	0.22	0.89
7/16/2012 13:00	Field Blank	Pesticides	Naled	0.22	UJ	ug/L	0.22	0.89
7/16/2012 13:00	Field Blank	Pesticides	Phorate	0.028	U	ug/L	0.028	0.11
7/16/2012 13:00	Field Blank	Pesticides	Atrazine	0.056	U	ug/L	0.056	0.22
7/16/2012 13:00	Field Blank	Pesticides	Fonofos	0.056	U	ug/L	0.056	0.22
7/16/2012 13:00	Field Blank	Pesticides	Malathion	0.056	U	ug/L	0.056	0.22
7/16/2012 13:00	Field Blank	Pesticides	Parathion Ethyl	0.11	UJ	ug/L	0.11	0.44
7/16/2012 13:00	Field Blank	Pesticides	Chlorpyrifos Methyl	0.056	U	ug/L	0.056	0.22
7/16/2012 13:00	Field Blank	Pesticides	Diazinon	0.056	U	ug/L	0.056	0.22
7/16/2012 13:00	Field Blank	Pesticides	Ethion	0.056	U	ug/L	0.056	0.22
7/16/2012 13:00	Field Blank	Pesticides	Hexazinone	0.17	U	ug/L	0.17	0.67
7/16/2012 13:00	Field Blank	Pesticides	Parathion Methyl	0.056	U	ug/L	0.056	0.22
7/16/2012 13:00	Field Blank	Pesticides	Butylate	0.11	U	ug/L	0.11	0.44

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
7/16/2012 13:00	Field Blank	Pesticides	Norflurazon	0.17	U	ug/L	0.17	0.67
7/16/2012 13:00	Field Blank	Pesticides	Ametryn	0.056	U	ug/L	0.056	0.22
7/16/2012 13:00	Field Blank	Pesticides	Chlorpyrifos Ethyl	0.056	U	ug/L	0.056	0.22
7/16/2012 13:00	Field Blank	Pesticides	Fenamiphos	0.17	U	ug/L	0.17	0.67
7/16/2012 13:00	Field Blank	Pesticides	Prometryn	0.11	U	ug/L	0.11	0.44
7/16/2012 13:00	Field Blank	Pesticides	Metalaxyl	0.22	U	ug/L	0.22	0.89
7/16/2012 13:00	Field Blank	Pesticides	Metribuzin	0.11	U	ug/L	0.11	0.44
7/16/2012 13:00	Field Blank	Pesticides	Alachlor	0.33	U	ug/L	0.33	1.3
7/16/2012 13:00	Field Blank	Pesticides	Ethoprop	0.028	U	ug/L	0.028	0.11
7/16/2012 13:00	Field Blank	Pesticides	Simazine	0.056	U	ug/L	0.056	0.22
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	1	U	ug/L	1	4.1
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.21	U	ug/L	0.21	0.82
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1	U	ug/L	1	4.1
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Acenaphthene	0.21	U	ug/L	0.21	0.82
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.21	U	ug/L	0.21	0.82
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.21	U	ug/L	0.21	0.82
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1	U	ug/L	2.1	8.2
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Nitrobenzene	2.1	U	ug/L	2.1	8.2
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Phenanthrene	0.21	U	ug/L	0.21	0.82
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	2-Nitrophenol	1	U	ug/L	1	4.1
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.1	U	ug/L	2.1	8.2
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1	U	ug/L	1	4.1
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Pentachlorophenol	3.1	U	ug/L	3.1	12
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Pyrene	0.21	U	ug/L	0.21	0.82
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.21	U	ug/L	0.21	0.82
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Butyl benzyl phthalate	5.2	U	ug/L	5.2	21
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.21	U	ug/L	0.21	0.82
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Fluorene	0.21	U	ug/L	0.21	0.82
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.1	U	ug/L	3.1	12
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.1	U	ug/L	2.1	8.2
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Phenol	1	U	ug/L	1	4.1
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	1	U	ug/L	1	4.1
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	1	U	ug/L	1	4.1
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	2-Chlorophenol	1	U	ug/L	1	4.1
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1	U	ug/L	3.1	12
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Hexachlorobutadiene	3.1	U	ug/L	3.1	12
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Dimethyl phthalate	10	U	ug/L	10	41
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Diethyl phthalate	1	U	ug/L	1	4.1

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Di-n-octyl phthalate	1	U	ug/L	1	4.1
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1	U	ug/L	1	4.1
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.21	U	ug/L	0.21	0.82
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1	U	ug/L	1	4.1
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	41	U	ug/L	41	160
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	1	U	ug/L	1	4.1
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Anthracene	0.21	U	ug/L	0.21	0.82
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Chrysene	0.21	U	ug/L	0.21	0.82
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Hexachlorobenzene	1	U	ug/L	1	4.1
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Isophorone	1	U	ug/L	1	4.1
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.1	U	ug/L	3.1	12
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	2,4-Dimethylphenol	10	U	ug/L	10	41
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	2-Chloronaphthalene	1	U	ug/L	1	4.1
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.21	U	ug/L	0.21	0.82
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.1	U	ug/L	3.1	12
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	15	U	ug/L	15	62
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Hexachloroethane	3.1	U	ug/L	3.1	12
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Naphthalene	0.21	U	ug/L	0.21	0.82
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	2,4-Dichlorophenol	1	U	ug/L	1	4.1
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Di-n-butyl phthalate	5.2	U	ug/L	5.2	21
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Fluoranthene	0.21	U	ug/L	0.21	0.82
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	2,4-Dinitrophenol	15	U	ug/L	15	62
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	62
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Acenaphthylene	0.21	U	ug/L	0.21	0.82
7/16/2012 13:00	Field Blank	Priority Organic Pollutants	Benzidine	100	U	ug/L	100	410
7/16/2012 8:00	TOX 1	Toxicology	Bioassay-Chron-Def-FW-Fish, NOEC	12.5		NOEC		
7/16/2012 8:00	TOX 1	Toxicology	Bioassay-Chron-Def-FW-Fish, IC25	100	L	IC25		
7/16/2012 8:00	TOX 1	Toxicology	Bioassay-Chron-Def-FW-C.dubia, NOEC	6.25		NOEC		
7/16/2012 8:00	TOX 1	Toxicology	Bioassay-Chron-Def-FW-C.dubia, IC25	5.6		IC25		

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

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: Kim Allen	**Contact Number:** 595-0553
Facility Name (as it appears on permit): Blountstown WWTF	**Former Names:**
NPDES Permit Number: FL0026867	**Permit Expiration Date:** 6/7/15
Physical Address: 16140 SE Johnson Street, Blountstown, Florida 32424	
District: NWD	**County:** Calhoun
Function of Facility: Municipal domestic wastewater treatment facility	
Facility Type: DW	**Permitted Capacity (MGD):** 1.5 MGD monthly average daily flow
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): 0.457 mgd (Monthly Average Daily Flow from 6/1/11 to 5/30/12)	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months):	
Description of type of Discharge: ☐ **Continuous** ☐ **Intermittent** ☐ **Seasonal** ☐ **Rainfall Dependent** ☒ **Other, please specify** ***This is an SBR facility that discharges in batches multiple times per day.	

Appendix F. (continued)

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

Monitoring Site	Description of Monitoring Site
FLW-01	Flow-meter/ totalizer at Reuse Water Tank Weir
EFF-01	Sample point at weir at old Chlorine Contact Chamber prior to discharge
PPI-01	UV monitoring system measured intensity meter Channel 1
PPI-02	UV monitoring system measured intensity meter Channel 2
EFF-03	End of Discharge Pipe at Sutton Creek

Description of Permitted Outfall(s):

The facility's discharge is to Sutton Creek to the Apalachicola River (Class III fresh waters) at Discharge Location (D-001) which is approximately 2 feet in length and discharges at a depth of approximately 0 feet. The point of discharge is located approximately at latitude 30o 27' 45" N, longitude 85o 02' 30" W.

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

An existing 1.50 MGD design capacity, monthly average daily flow (MADF) advanced wastewater treatment (AWT) facility using Sequential Batch Reactors (SBR) with phosphorus removal that discharges effluent that meets the 5:5:3:1 CBOD5, TSS, Nitrogen and Phosphorus requirements defined under section 403.086(4)(a), F.S. The system facilities include an influent pumping station, one automatic and one manual bar screen, a Grit Separator, two 975,000-gallon SBR units, alum injection, a Post Equalization Tank with filter supply pumps, two cloth disk filters and a polymer feed system, dual channel ultraviolet light disinfection system with four UV modules with a total capacity of 4.0 MGD providing basic disinfection and a Reuse Water Tank. Effluent gravity flows from the Reuse Water Tank via a 16-inch pipe to Sutton Creek. Residuals are aerobically digested, dewatered by a belt filter press and disposed of at a landfill.

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

I. RECLAIMED WATER AND EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

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 Sutton Creek. Such discharge shall be limited and monitored by the permittee as specified below and reported in accordance with Permit Condition I.B.7.:

			Reclaimed Water Limitations		Monitoring Requirements			
Parameter	Units	Max/ Min	Limit	Statistical Basis	Frequency of Monitoring	Sample Type	Monitoring Site	Notes
Flow to Sutton Creek	MGD	Max	1.500	Monthly Average	Continuous	Recording Flow Meter with Totalizer	FLW-01	See I.A.4
BOD, Carbonaceous 5 day, 20C	mg/L	Max Max Max Max	5.0 6.25 7.5 10.0	Annual Average Monthly Average Weekly Average Single Sample	Weekly	16-hr FPC	EFF-01	
Solids, Total Suspended	mg/L	Max Max Max Max	5.0 6.25 7.5 10.0	Annual Average Monthly Average Weekly Average Single Sample	Weekly	16-hr FPC	EFF-01	
Nitrogen, Total	mg/L	Max Max Max Max	3.0 3.75 4.5 6.0	Annual Average Monthly Average Weekly Average Single Sample	Weekly	16-hr FPC	EFF-01	
Phosphorus, Total (as P)	mg/L	Max Max Max Max	1.0 1.25 1.5 2.0	Annual Average Monthly Average Weekly Average Single Sample	Weekly	16-hr FPC	EFF-01	
pH	s.u.	Min Max	6.0 8.5	Single Sample Single Sample	Continuous	Meter	EFF-01	See I.A.3
Oxygen, Dissolved (D.O)	mg/L	Min	6.0	Single Sample	Daily	Grab	EFF-03	
Coliform, Fecal	#/100mL	Max Max Max	200 200 800	Annual Average Monthly Geo. Mean Single Sample	Weekly	Grab	EFF-01	See I.A.5
Ultraviolet Light Intensity - Measured Channel 1	percent	Min	25	Single Sample	Continuous	Meter	PPI-01	See I.A.7 and I.A.8
Ultraviolet Light Intensity - Measured Channel 2	percent	Min	25	Single Sample	Continuous	Meter	PPI-02	See I.A.7 and I.A.8
Chronic Whole Effluent Toxicity, 7-Day IC25 (Ceriodaphnia dubia)	percent	Min	100	Single Sample	Quarterly	24-hr FPC	EFF-01	See I.A.6
Chronic Whole Effluent Toxicity, 7-Day IC25 (Pimephales promelas)	percent	Min	100	Single Sample	Quarterly	24-hr FPC	EFF-01	See I.A.6

Appendix F. (continued)

PART I: Continued

Receiving Waters:	**Classification (indicate whether fresh or marine):**
Sutton Creek to the Apalachicola River	**Class III Fresh**

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

(1) Routine Tests: All routine tests shall be conducted using a control (0% effluent) and a minimum of five test dilutions: **100%**, **50%**, **25%**, **12.5%**, and **6.25%** final effluent.

(2) The permittee shall conduct a daphnid, **Ceriodaphnia dubia**, Survival and Reproduction Test and a fathead minnow, **Pimephales promelas**, Larval Survival and Growth Test, concurrently.

(3) All test species, procedures and quality assurance criteria used shall be in accordance with **Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms**, 4th ed., EPA-821-R-02-013. 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 chronic toxicity testing in accordance with the revised method.

(4) The control water and dilution water shall be moderately hard water as described in EPA-821-R-02-013, Section 7.

Administrative or Consent Orders (date executed, specific requirements, interim limit dates-if applicable, etc.):
AO077NW was issued with the permit on 6/8/10 to give the facility time to comply with new staffing requirements.
CO OGC File No. 10-1543-07-DW was issed 6/4/10 to address WET failures.

Facility Mixing Zone Details (if applicable):

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

Monitoring Date	Outfall Indicator	Parameter Code	Parameter Description	MLC	Data	Limit	Statistical Base	Units
4/30/2011	001-1	P TRP6C	IC25 STATRE 7DAY CHR PIMEPHALES	P	93.38	100	MINIMUM	%
9/30/2011	001-1	P 00600	NITROGEN, TOTAL	1	5.08	4.5	WKLY AVG	mg/L
9/30/2011	001-1	P 00600	NITROGEN, TOTAL	1	3.2	3.75	MO AVG	mg/L
11/30/2011	001-1	P TRP3B	IC25 STATRE 7DAY CHR CERIODAPHNIA	P	88.8	100	MINIMUM	%
11/30/2011	001-1	P TRP6C	IC25 STATRE 7DAY CHR PIMEPHALES	P	59.78	100	MINIMUM	%
4/30/2012	001-1	P TRP3B	IC25 STATRE 7DAY CHR CERIODAPHNIA	P	3.5	100	MINIMUM	%

Appendix F. (continued)

Describe previous FYI and WQBEL study: The previous FYI was performed 8/19/09, with a February 2010 report date.
Describe previous or current Enforcement Actions (including WLs): The facility is currently under CO OGC File No. 10-1543-07-DW (issed 6/4/10) to address WET failures.
Describe any violations or problems noted in previous inspection: N/A
Discuss whether DMR trends within previous five years are improving or declining: N/A
Additional Comments (this should include a trend of the Effluent, i.e. if the facility is now Reuse):

PART II: Sampling Event Information	
Date(s) sample collected: 7/16/12	**Sampler(s):** Nathan Mulkey/Rick Abad
Temperature (Deg C): 31.11	**pH (SU):** 6.88
Dissolved Oxygen (mg/L): 7.60	**Conductivity (umhos/cm):** 758
Total Residual Chlorine (mg/L):	**Total Residual Chlorine - after Disinfection (mg/L):**
Method of Chlorination:	**Method of De-chlorination:**
Flow During Sample Collection for each outfall(MGD):	
Mean Flow for each outfall for previous 12 months based on sampling date (If samples are taken on more than one day, indicate Mean Flow for each day):	
Describe Discharge during Sampling Event: ☐ Continuous ☐ Intermittent ☐ Seasonal ☐ Rainfall Dependent ☒ Other, please specify	

Appendix F. (continued)

Describe any conditions, difficulties or abnormal events that occurred during the sample collection and any other additional comments here:

Appendix G. EPA End Sheet

The Bioassay of Blountstown WWTF effluent sampled on July 16, 18, and 20, 2012. NPDES #FL0026867.

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 FL0026867 11 12	1 2 0 7 1 6	18 B	19 S	20 1

Remarks

66

The Priority Pollutants Analysis of Blountstown WWTF effluent sampled on July 16, 2012. NPDES #FL0026867.

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 FL0026867 11 12	1 2 0 7 1 6	18 X	19 S	20 1

Remarks

66

Biological Analyses of Blountstown WWTF effluent sampled on July 16, 2012. NPDES #FL0026867.

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 FL0026867 11 12	1 2 0 7 1 6	18 S	19 S	20 1

Remarks

66