

Effluent Quality Assessment of the

Panama City Beach WWTF #1

Bay County

NPDES #FL0021512

Sampled July 16, 18, and 20, 2007

January 2008

Biology Section
Bureau of Laboratories
Division of Resource Assessment and Management

Quality Manual No. 870346G
NELAC Certification No. E31780

Panama City Beach WWTF #1, 206 North Gulf Boulevard, Panama City Beach, Bay County, Florida, 32413, NPDES #FL0021512. Effluent samples for algal growth potential, bioassay, and chemical analyses for this facility were collected on July 16, 2007. Additional samples for bioassay analyses were collected on July 18 and 20, 2007.

Introduction

Panama City Beach WWTF #1 is an advanced wastewater treatment facility which uses the activated-sludge process to treat domestic wastewater. The facility has a design flow of 10 million gallons per day (MGD) monthly average daily flow (MADF). The MADF through the facility from July 1, 2006, through June 30, 2007, was 3.55 MGD. The facility operates in the extended-aeration mode. The facility consists of four extended-aeration trains. The treatment process includes pretreatment, nitrification, denitrification, secondary clarification, filtration, ultraviolet disinfection, backup chlorination (with sodium hypochlorite) and dechlorination (with sulfur dioxide), digestion, and residuals handling. The facility has an 8.66 million gallon emergency reject-holding pond and a 5.0 million gallon wet-weather storage pond. The facility has completed modifications that will allow it to direct up to 4.085 MGD of treated effluent to a slow-rate public access reuse system (R-001). The facility has been granted a water reuse franchise area but is still in the process of connecting customers to the reuse system. Treated effluent not going to reuse is discharged through Outfall D-001 to an unnamed ditch thence into the Class II waters of West Bay. Outfall D-001 is located on the treatment plant site at approximately latitude 30º 12' 55" N and longitude 85º 51' 20" W. Discharge through Outfall D-001 is limited to 7 MGD. From July 1, 2006, through June 30, 2007, the MADF was 2.125 MGD at this outfall.

There are no administrative orders for this facility. Consent Orders (CO) for the facility include CO 97-0630 which required Level II Water Quality Based Effluent Levels (WQBELs), including a mixing zone analysis for copper. The CO gave an interim limit of 8 µg/L copper and a copper variance granting a copper limit of 8 µg/L which expired with the expiration of the NPDES permit on September 25, 2002. CO 07-0610 effective July 27, 2007, was issued in response to the facility placing the reuse system into service without proper clearance from the FDEP, a sewer spill into Grand Lagoon, and fecal coliform violations at various times from June 2003 to October 2005. A review of Discharge Monitoring Report (DMR) data for the past year revealed permit limit violations for total phosphorus (value 4.3 mg/L, limit 4 mg/L) and total recoverable copper (value 3.1 µg/L, limit 2.9 µg/L*) in August 2006. (Facility information provided by Kim Allen of FDEP Northeast District.)

*Limit in the permit; Statewide Water Quality Criteria for copper is now ≤ 3.7 µg/L for Class II waters (62-302.530, (23) F.A.C.).

Methods

Samples were collected from the EFD-01 NPDES sampling point for Outfall D-001 by Glenn Butts (FDEP Northwest District Pensacola) and Mark Sumner (FDEP Northwest District Branch Office Panama City) following DEP-SOP-001/01 FS 2400 Wastewater Sampling. All DEP SOPs are available on the web at: http://www.floridadep.org/labs/qa/sops.htm.

See Appendix A for the completed chain of custody form.

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

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

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

Toxicity Test Results

Tests were performed July 17 - 24, 2007.

Ceriodaphnia dubia chronic screening bioassay – No Result

Pimephales promelas chronic screening bioassay – NOEC, 100% sample

The bioassay samples did not show chronic toxicity to the *Pimephales promelas* test organisms. The *Ceriodaphnia dubia* test was invalidated due to insufficient reproduction in the controls of the facility test and in the concurrent standard reference toxicity test.

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 133 mg dry wt/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. Raschke and Shultz (1987) found that AGP values above 5.0 mg dry weight/L represent a “problem” threshold for fresh receiving waters, implying nutrient enrichment. The analytical chemistry results for inorganic nutrients suggest that the effluent is co-limited by both nitrogen and phosphorus. The predicted AGP based on inorganic nitrogen concentrations was 103.74 (±20%) mg dry wt/L. The predicted AGP based on phosphorus concentrations was 68.8 (±20%) mg dry wt/L (Table 1; Miller et al. 1978).

The effluent Algal Growth Potential (AGP) was 46.4 mg dry wt/L of the saltwater species *Dunaliella tertiolecta.* Raschke and Shultz found that AGP values above 10.0 mg dry weight/L represent a “problem” threshold for marine receiving waters, implying nutrient enrichment (personal communication with Ron Raschke USEPA Region 4, 1987).

See Table 1 for AGP results.

Chemistry Results

Total residual chlorine and total ammonia were not detected in the three bioassay samples in the laboratory. The total ammonia concentration in the sample collected and preserved for chemical analysis (July 16, 2007) was 0.03 mg/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was < 0.02 mg/L.

Aluminum, copper, nickel and zinc were detected in the effluent at levels that comply with Class II (Shellfish Propagation or Harvesting) water quality criteria (62-302.530, F.A.C.). Cadmium and iron were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL). Samples for nutrients, pesticides, priority pollutants, and biochemical oxygen demand were not properly preserved, so results are estimated.

See Table 2 for results of analytes detected in the effluent, and corresponding limits. See Appendix E for a complete list of chemical analyses performed.

Conclusion

The effluent samples collected from NPDES sampling point EFD-01 for Outfall D-001 for this facility on July 16, 18, and 20, 2007, were not chronically toxic to the *Pimephales promelas* (fathead minnow) test organisms during the 7-day chronic screening bioassay. The *Ceriodaphnia dubia* chronic screening test was invalidated due to inadequate reproduction in the controls during the test period. The effluent AGP results exceeded the "problem" thresholds for fresh and marine receiving waters, suggesting nutrient enrichment may be an issue. Effluent water quality samples did not exceed any applicable water quality standards or violate any permit conditions.

Literature Cited

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

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

Table 1. Measured and predicted algal growth potential (AGP; mg dry weight/L) of the freshwater species *Pseudokirchneriella subcaptitata* for total soluble inorganic nitrogen (TSIN), orthophosphate (OP), total nitrogen (TN) and total phosphorus (TP) limitation, the AGP (salinity adjusted) of the saltwater species *Dunaliella tertiolecta* and ratios of nitrogen to phosphorus for samples collected from Panama City Beach Wastewater Treatment Facility #1 on July 16, 2007.

Location	AGP (measured)	Predicted AGP (TSIN) ± 20%	Predicted AGP (OP) ± 20%	Predicted AGP (TN) ± 20%	Predicted AGP (TP) ± 20%	AGP (salinity adjusted)	Inorganic N:P ratio	Total N:P ratio
Effluent	133.0	103.7 ± 20.7	68.8 ± 13.8	135.3 ± 27.1	68.8 ± 13.8	46.4	17.1	22.3

Table 2. Effluent limits, Class II Criteria for predominantly marine waters and chemical and microbiological data for samples of effluent from the Panama City Beach WWTF #1 collected on July 16, 2007.

Panama City Beach Wastewater Treatment Facility #1 NPDES# FL0021512	Class II Stds	Effluent Limits	Effluent
Organic Constituents (µg/L)			
None Detected	-	-	-
Metals (µg/L unless otherwise noted)			
Aluminum	≤ 1500	-	93 f
Arsenic	≤ 50	-	0.5 U
Cadmium	≤ 8.8	-	0.032 I
Calcium (mg/L)	-	-	27.4 f
Chromium-III	-	-	1 U
Copper	≤ 3.7	≤ 2.9 s	2.36
Iron	≤ 300	-	15 I
Lead	≤ 8.5	≤ 5.6 s	0.2 U
Magnesium (mg/L)	-	-	8.4
Nickel	≤ 8.3	-	2.53
Selenium	≤ 71	-	0.5 U
Silver	≤ 86	-	0.025 U
Zinc	≤ 86	-	46
Nutrients (mg/L)			
Ortho-phosphate	-	-	0.16 Y
Total Phosphorus	≤ 0.1 s	≤ 4 s	0.16 Y
Total Ammonia	-	≤ 2.0 s	0.03 Yf
Un-ionized Ammonia	-	≤ 0.02 s	≤ 0.02 c
Nitrate and Nitrite	-	-	2.7 Y
Total Kjeldahl Nitrogen	-	-	0.86 Y
Organic Nitrogen	-	-	0.83 c
Total Nitrogen	-	≤ 16 s	3.56 c
General Physical and Chemical Parameters			
Dissolved Oxygen (mg/L)	≥ 4.0	≥ 6.0 s	9.2
pH (SU)	6.5 - 8.5	6.5 - 8.5 s	7.2
Conductivity (µmhos/cm)	-	-	860
Temperature °C	-	-	30.5
Salinity	-	-	0.38 c
Total Residual Chlorine (mg/L)	≤ 0.01	≤ 0.01 s	≤ 0.03 £
Total Suspended Solids (mg/L)	-	≤ 20 s	4
Turbidity (NTU)	< 29 t	-	0.45 Y
CBOD, 5 day (mg/L), N - inhibited	-	≤ 20 s	0.52 IY
Flow (MGD)	-	≤ 7 a	3.55 a
Hardness (mg $CaCO_3$)	-	-	103.01 c
Microbiology (Number of counts/100ml)			
Fecal Coliforms	≤ 800 s	≤ 86 s	-

Value exceeds the Class III Water Quality Criteria or permit limits

a - Monthly average
b - Value is calculated based on hardness
c - Value is calculated
f - Analyte was detected in both sample and field blank
s - Single sample
t - Shall not exceed 29 NTUs above background
A - Value reported is the mean of two or more determinations
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
U - Material analyzed for but not detected; value reported is the method detection limit
Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
£ - Total residual chlorine measured in the bioassay laboratory

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2007-07-16-28
Panama City Beach
MONDAY 07-16-07
Customer: NW-DIST
Project ID: FYI3
PMAS: 1143

Requester: Shannan Bogdanov
Collected By: G. BUTTS, M. SUMNER
Sampling Agency: FDEP NW DISTRICT

Field Report Prepared By: G. BUTTS
Send Final Report To: Greg Smith
G. BUTTS

Lab ID *	Location: PANAMA CITY BEACH WWTP		X Comp / ☐ Grab	Collection (begin) Date: 07-15-07 Time: Eastern Central	Collection (end) Date: 07-16-07 Time: 1000 Eastern Central			Bottle Group(s)**
	Field ID: # 1		Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L): 9.17	Storet Station Number: EMS 1003M002216			
	Matrix (Include type e.g. Salt, Fresh, etc): FRESH	Temp (C): 30.45 pH: 7.18	Sample Depth ☐ m ☐ ft	8.42 80	X Salinity (PPTh) X Sp Conductance (umho/cm)	NPDES Number: FL0021512		
	Latitude ° ' "	Longitude ° ' "	Comments					
Lab ID *	Location: NW DISTRICT CHEM LAB PENSACOLA		☐ Comp / X Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date: 07-16-07 Time: 0645 Eastern Central			Bottle Group(s)**
	Field ID: BLANKS		Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number			
	Matrix (Include type e.g. Salt, Fresh, etc): FRESH	Temp (C) pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number			
	Latitude ° ' "	Longitude ° ' "	Comments					
Lab ID *	Location		☐ Comp / ☐ Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central			Bottle Group(s)**
	Field ID		Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number			
	Matrix (Include type e.g. Salt, Fresh, etc):	Temp (C) pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number			
	Latitude ° ' "	Longitude ° ' "	Comments					
Lab ID *	Location		☐ Comp / ☐ Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central			Bottle Group(s)**
	Field ID		Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number			
	Matrix (Include type e.g. Salt, Fresh, etc):	Temp (C) pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number			
	Latitude ° ' "	Longitude ° ' "	Comments					

Relinquished By	Date/Time	Shipping Method	Received By	Date/Time	Relinquished By	Date/Time	Received By	Date/Time
G. BUTTS	07-16-07	DHL	Tom-12	07/17/07 8:45				

* Shaded Areas for Lab use only

** Please see reverse side for Bottle Group information

last revised October 1, 2003

7/17/07
2 BOTTLES.

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2007-07-16-28
Panama City Beach

WEDNESDAY 07-18-07 Requester: Shannan Bogdanov Field Report Prepared By: G. BUTTS

Customer: NW-DIST Collected By: G. BUTTS, M. SUMNER Send Final Report To Greg Smith

Project ID: FYI3 Sampling Agency: FDEP NW DISTRICT G. BUTTS

PMAS: 1143

Lab ID *	Location: PANAMA CITY BEACH WWTP		☒ Comp ☐ Grab	Collection (begin) Date 07-17-07 Time	Eastern Central	Collection (end) Date 07-18-07 Time 0940	Eastern Central	Bottle Group(s)**
	Field ID: # 2		Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)		Storet Station Number GMS 1003M002216		
	Matrix (Include type e.g. Salt, Fresh, etc): FRESH	Temp (C)	pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number FL0021512	
	Latitude o ' "	Longitude o ' "		Comments: Flow 5.371 MGD				
Lab ID *	Location		☐ Comp ☐ Grab	Collection (begin) Date Time	Eastern Central	Collection (end) Date Time	Eastern Central	Bottle Group(s)**
	Field ID		Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)		Storet Station Number		
	Matrix (Include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number	
	Latitude o ' "	Longitude o ' "		Comments				
Lab ID *	Location		☐ Comp ☐ Grab	Collection (begin) Date Time	Eastern Central	Collection (end) Date Time	Eastern Central	Bottle Group(s)**
	Field ID		Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)		Storet Station Number		
	Matrix (Include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number	
	Latitude o ' "	Longitude o ' "		Comments				
Lab ID *	Location		☐ Comp ☐ Grab	Collection (begin) Date Time	Eastern Central	Collection (end) Date Time	Eastern Central	Bottle Group(s)**
	Field ID		Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)		Storet Station Number		
	Matrix (Include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number	
	Latitude o ' "	Longitude o ' "		Comments				

Relinquished By	Date/Time	Shipping Method	Received By	Date/Time	Relinquished By	Date/Time	Received By	Date/Time
G. BUTTS	07-18-07	DHL	Tom E	07/19/07 9:10				

* Shaded Areas for Lab use only

** Please see reverse side for Bottle Group information

last revised October 1, 2003

Page 1 of 3

PPV 7/19/07
2 BOTTLES

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2007-07-16-28
Panama City Beach
FRIDAY 07-20-07
Customer: NW-DIST
Project ID: FYI3
PMAS: 1143

Requester: Shannan Bogdanov
Collected By: G. BUTTS, M. SUMNER
Sampling Agency: FDEP NW DISTRICT

Field Report Prepared By: G. BUTTS
Send Final Report To Greg Smith
G. BUTTS

Lab ID *	Location: PANAMA CITY BEACH WWTP			☒ Comp ☐ Grab	Collection (begin) Date 07-19-07 Time Eastern Central	Collection (end) Date 07-20-07 Time 0935 Eastern Central			Bottle Group(s)**
	Field ID: # 3			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number: GMS 1003M002216			
	Matrix (Include type e.g. Salt, Fresh, etc): FRESH	Temp (C)	pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number: FL0021512		
	Latitude o ' "	Longitude o ' "		Comments					
Lab ID *	Location			☐ Comp ☐ Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central			Bottle Group(s)**
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number			
	Matrix (Include type e.g. Salt, Fresh, etc	Temp (C)	pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number		
	Latitude o ' "	Longitude o ' "		Comments					
Lab ID *	Location			☐ Comp ☐ Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central			Bottle Group(s)**
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number			
	Matrix (Include type e.g. Salt, Fresh, etc	Temp (C)	pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number		
	Latitude o ' "	Longitude o ' "		Comments					
Lab ID *	Location			☐ Comp ☐ Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central			Bottle Group(s)**
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number			
	Matrix (Include type e.g. Salt, Fresh, etc	Temp (C)	pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number		
	Latitude o ' "	Longitude o ' "		Comments					

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
Blake Stacey	7/20/07 1405	hand Delivered	M. Faircloth	7/20/07 1405	M. Faircloth	7/23/07 1245	[illegible]	7/23/07 12:45

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

Temperature 5.7 °C mf

last revised October 1, 2003

Appendix B. Bench Sheets

FDEP Biology Laboratory - Chronic Screen Bench Sheet

Ceriodaphnia dubia

Facility: Panama City Beach WWTP #1
Address: 2016 North Gulf Boulevard
County: Bay County
NPDES Permit #: FL 0021512
Contact/District: Glenn Butts/Mark Sumner NORTHWEST NORTHEAST PPV 7/12/07

LIMS entry: 7-31-07 MF verified: 7/31/07 JD

Diluent/ Batch: 20% DMW / 7-13-07 Test Days Used: 0-7
20% DMW /_____ Test Days Used: _____

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

Start Date: 7-17-07 Time: 13 00
End Date: 7-25-07 Time: 1400

Organism: *Ceriodaphnia dubia*
Organism Batch #: 29-07
Organism age : <24 hours
Feeding: Prior to Test and Daily
Food: YCT *P. subcapitata*
Food Batch: 1-7-07 1-07
Chamber size : 30 ml
Sample volume : 20 ml

Sample Received	Lab Sample #	LIMS Job #	LIMS Sample #	Collection Date/Time	Received Date/Time
Test Day 0	1	TLH-2007-07-17-59	10260291	7/16/07 1000	7/17/07 1010
Test Day 2	2	TLH-2007-07-19-74	10279025	7/18/07 0940	7/19/07 0953
Test Day 4	3	TLH-2007-07-23-01	10285710	7/20/07 0900	7/20/07 1405

Water Quality Parameters	Field Chlorine (mg/L)			Lab Chlorine (mg/L)			Alkalinity (mg/L as $CaCO_3$)		
Lab Sample #:	1	2	3	1	2	3	1	2	3
Sample:	Not Received	Not Received	Not Received	<0.03	<0.03	<0.03	103	92	97
Diluent/Control:				<0.03	<0.03	<0.03	84	84	84
Method:	—	—	—	Hach	Hach	Hach	Hach	Hach	Hach
Measured by:	—	—	—	PPV	PPV	MF	PPV	PPV	BA/PPV
Verified by:	MF	MF	MF	JD	MF	PPV	JD	MF	MF
	Conductivity (circle one) (µmhos-cm) (mmhos-cm)			Ammonia (mg/L)			Hardness (mg/L as $CaCO_3$)		
Lab Sample #:	1	2	3	1	2	3	1	2	3
Sample:	865	852	877	<0.017	<0.017	<0.017	112	105	109
Diluent/Control:	178	178	178	<0.017	<0.017	<0.017	89	89	89
Method:	Mettler	Mettler	Mettler	Denver	Denver	Denver	Hach	Hach	Hach
Measured by:	BA	BA	BA	MF	BA	MF	PPV	PPV	BA/PPV
Verified by:	MF	MF	MF	JD	MF	PPV	JD	MF	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 # 2 min. 24.2 max. 25.3 mean 24.8
Room B246 min. 24.9 max. 26.5 mean 25.7

Test Replicate	Loaded from culture vial
1	A3
2	A4
3	A8
4	B5
5	B4
6	B21
7	B22
8	B18
9	B24
10	B29

Statistics No Result	
Control % CV:	
Dunnetts PMSD:	
Reproduction NOEC:	
Survival NOEC:	
T-test value	
T- table value:	
df:	

Investigators' signatures
James Daniel
Brice Nichols
Peter Vidrine
Mandell Faircloth
Nicole Wellendorf
REVIEWER

Comments: Test Reported as No Result due to insufficient reproduction in the Controls, See NCR 2565 MF 7-31-07

Test Page 1 of 3

PAGE 000010

revised 08/24/06 MF/SP

FDEP Biology Laboratory - Chronic Screen Bench Sheet

Ceriodaphnia dubia Survival and Reproduction

Facility: PANAMA CITY BEACH WWTP #1

LIMS Sample # 1026291 for lab sample 1

Start Date: 7-17-07 Time: 13:00

End Date: 7-25-07 Time: 1400

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	0	0	0	0	0	0	0	0	0	0	0	10	0
	4	0	0	0	0	0	0	0	0	0	0	0	10	0
	5	0	0	0	0	0	0	0	0	0	0	0	10	0
	6	1	0	0	0	0	0	0	0	0	0	1	10	0,1
	7	5	4	7	2	2	1	4	0	4	2	31	10	3,1
	8	12	8	13	8	8	7	0	5	6	0	67	10	6.7
	Total	18	12	20	10	10	8	4	5	10	2	99	10	9.9

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	Total Neonates	Surviving adults	Neonates per adult
100% sample	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	0	0	0	1	3	10	0.3
	4	2	3	0	2	3	3	2	2	0	0	mp 17	10	1,7
	5	2	1	3	2	1	2	3	3	3	3	mp 23	10	2.3
	6	4	6	0	0	0	0	0	0	~~07~~	~~0~~	mp 21	10	2.1
	7	0	0	0	0	5	8	5	6	0	0	mp 24	10	2.4
	8	10	12	11	0	0	12	14	13	11	12	mp 95	10	9.5
	Total	18	22	16	4	9	25	24	24	21	20	183	10	18.3

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

Concentration	Mean neonates /adult	% survival
Control	9.9	100 %
100%	18.3	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: Test reported as NO RESULT due to insufficient reproduction in the controls. See NCR 2565. MF 7-31-07

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

Appendix B. (continued)

FDEP Biology Laboratory - Chronic Screen Bench Sheet

Ceriodaphnia dubia Parameters

Facility: PANAMA CITY BEACH WWTP #1

LIMS Sample # : IC260291 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	24.5	7.9	178					
	1	12.5%	M	7.8	24.2	8.5	860					
	Measured by:			BA	BA	BA	BA					
	Recorded by:			BA	BA	BA	BA					
Day 1	sample:	Control	M	8.1	24.0	8.1	177	M	8.0	24.9	7.2	183
	1	12.5%	M	7.9	24.5	8.6	873	M	8.2	24.6	7.9	887
	Measured by:			BA	BA	BA	BA		BA	BA	BA	BA
	Recorded by:			BA	BA	BA	BA		BA	BA	BA	BA
Day 2	sample:	Control	M	8.1	24.4	7.6	177	M	8.1	24.4	7.8	188
	2	25%	M	7.7	25.8	7.7	841	M	8.2	24.5	8.0	908
	Measured by:			BA	BA	BA	BA		BA	BA	BA	BA
	Recorded by:			BA	BA	BA	BA		BA	BA	BA	BA
Day 3	sample:	Control	M	8.2	24.0	8.0	177	M	7.9	24.7	6.5	193
	2	25%	M	7.3	24.2	8.0	824	M	8.3	24.4	6.7	882
	Measured by:			BA	BA	BA	BA		BA	BA	BA	BA
	Recorded by:			BA	BA	BA	BA		BA	BA	BA	BA
Day 4	sample:	Control	M	8.1	24.0	7.5	178	M	8.1	24.0	7.5	192
	3	50%	M	7.4	24.2	7.8	353	M	8.2	24.0	7.9	842
	Measured by:			BA	BA	BA	BA		BA	BA	BA	BA
	Recorded by:			BA	BA	BA	BA		BA	BA	BA	BA
Day 5	sample:	Control	M	8.1	24.3	7.9	181	M	8.2	24.9	8.1	205
	3	100%	M	7.8	24.7	8.5	846	M	8.3	25.2	8.1	900
	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	8.2	24.7	7.5	180	M	8.2	24.0	7.1	190
	3	100%	M	7.7	24.7	8.2	867	M	8.2	24.0	7.5	871
	Measured by:			MF	MF	MF	MF		BA	BA	BA	BA
	Recorded by:			MF	MF	MF	MF		BA	BA	BA	BA
Day 7	sample:	Control	M	8.1	24.5	7.3	180	M	8.0	24.4	7.4	194
	3	100%	M	7.9	24.6	7.4	867	M	8.2	25.0	7.1	892
	Measured by:			BA	BA	BA	BA		BA	BA	BA	BA
	Recorded by:			BA	BA	BA	BA		BA	BA	BA	BA
Day 8	sample:	Control						M	8.1	24.9	7.5	192
	3	100%						M	8.3	24.9	7.2	894
	Measured by:								MF	MF	MF	MF
	Recorded by:								MF	MF	MF	MF

Comments:

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

Test Page 3 of 3

PAGE 000012

revised 08/24/06 MF/SP

FDEP Biology Laboratory - Chronic Screen Bench Sheet

Pimphales promelas, or Menidia beryllina

Facility: Panama C.I. Beach WWTP #1
Address: 7016 North Gulf Boulevard
County: Bay
NPDES Permit #: FL 0021512
Contact/District: Glenn Butts / 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: 7-17-07 Time: 15:40
End Date: 7-24-07 Time: 11:30

Diluent/ Batch:
MHW / 7-14-07 Test Days Used: C-6
MHW / — Test Days Used: —
ASW / — Test Days Used: —
ASW / — Test Days Used: —

Organism age : 1 days
Feeding Prior to Test and Daily
Artemia Lot # [illegible] 96
Chamber size : 1000 ml
Test volume : 500 ml

Artemia Batch #	
Day 0 107-07	Day 4 111-07
Day 1 108-07	Day 5 112-07
Day 2 109-07	Day 6 113-07
Day 3 110-07	

LIMS:	Date	Initials
Entry:	7-31-07	MM
Verification:	8/1/07	SD

Sample Received	Lab Sample #	LIMS Job #	LIMS Sample #	Collection Date/Time	Received Date/Time
Test Day 0	1	TLH-[illegible]	10 24 491	7/16/07 1600	7/17/07 1010
Test Day 2	2	TLH-[illegible]	10 27 519	7/18/07 0800	7/18/07 1510
Test Day 4	3	TLH-20 1-07-23-01	10 28 510	7/20/07 0900	7/20/07 1405

TLH-20071-07-19-14 #10279123 7/18/07 0900 collected
7/19/07 0853 Received. PM 7/24/07

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:	MT Treated	MT Treated	MT Treated	<0.03	<0.03	<0.03	103	92	91	112	105	109
Diluent/Control:				<0.03	<0.03	<0.03	80	80	78	99	99	93
Method:	—	—	—	Hach	Hach	Hach	Hach	Hach	Hach	Hach	Hach	Hach
Measured by:	—	—	—	PM	PM	BA PM	PM	PM	BA PM	PM	PM	BA PM
Verified by:	MF	MF	MF	SD	MF	BA MF	SD	MF	MF	SD	MF	MF

	Conductivity (circle one) (µmhos-cm mmhos-cm)			Ammonia (mg/L)			Salinity (ppth)			Temperature Stepped ±6° C (all samples) (yes) no
Lab Sample#:	1	2	3	1	2	3	1	2	3	Holding Time ≤36 hours (yes) no
Sample:	865	852	877	<0.017	<0.017	<0.017	—	—	—	Light Intensity : 50 - 100 ft. candles
Diluent/Control:	325	325	325	<0.017	<0.017	<0.017	—	—	—	Photoperiod : 16 light 8 dark
Method:	Mettler	Mettler	Mettler	Denver	Denver	Denver	Mettler	Mettler	Mettler	Temperature Range °C: 24.8
Measured by:	SD	SD	SD	MF	~~BA~~ PM	MF	—	—	—	Incubator # 2 min 24.0 max 25.3 mean ~~25.0~~ 25.0
Verified by:	MF	MF	MF	PM	PM	PM	—	—	—	Water bath # ___ min ___ max ___ mean ___
										Room B246 min 24.4 max 26.5 mean 25.7

Investigators' signatures
James Daniel
Marshall Fairbanks
Bruce Beckham
Peter Vitchuk S.
Nicole Willendorf
REVIEWER

Statistics	
Control %cv:	11.7%
Dunnetts PMSD:	7.8%
Survival NOEC:	100%
Survival LOEC:	>100%
Growth NOEC:	100%
Growth LOEC:	>100%

Comments:
[illegible] PM 7/24/07

Test Page 1 of 4

PAGE 13

revised 3/13/07 MF

Appendix B. (continued)

FDEP Biology Laboratory - Chronic Screen Bench Sheet
Pimphales promelas or Menidia beryllina Survival

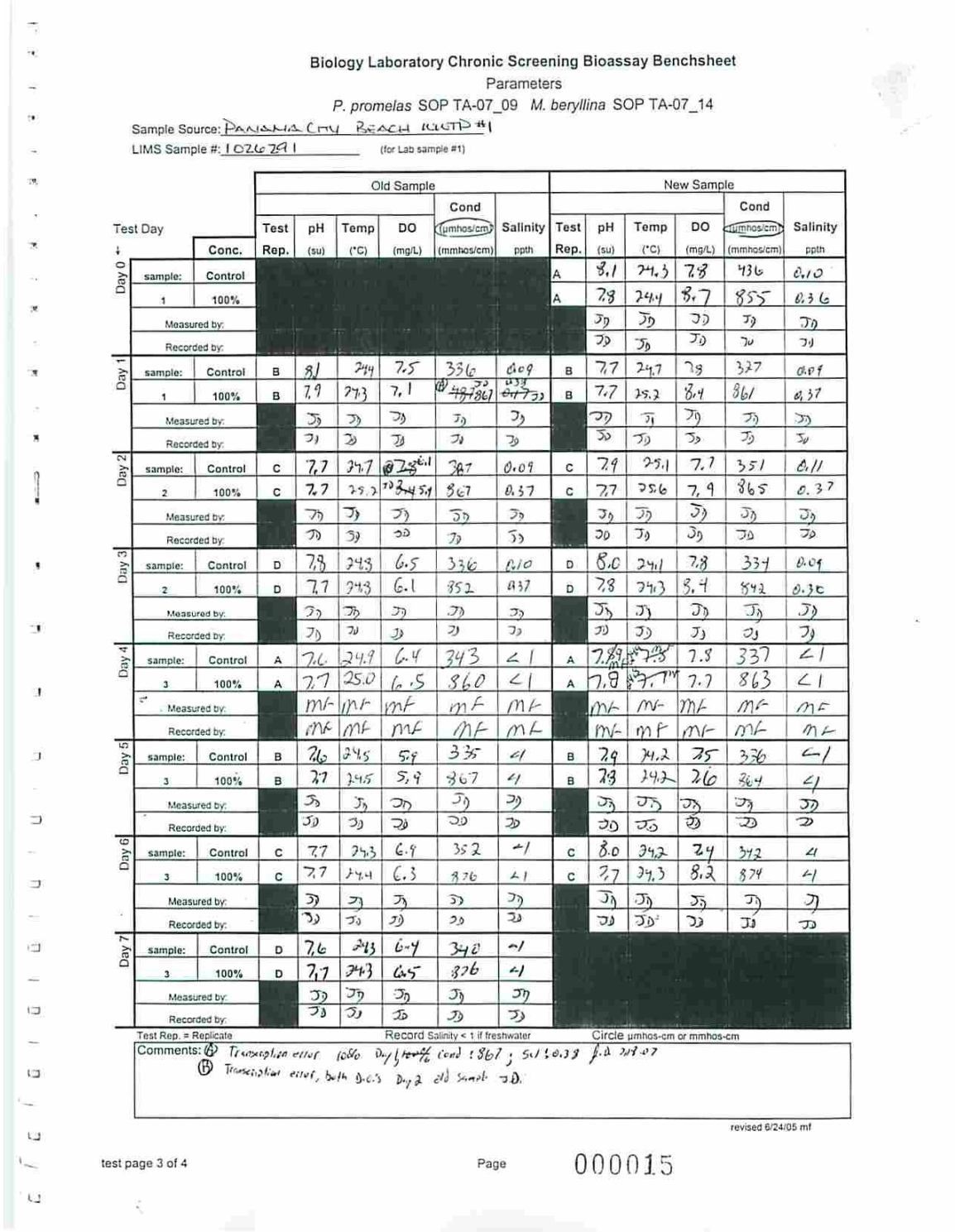
Facility: Panama City Beach WWTP #1 Organism: P. promelas M.beryllina (circle one)

LIMS Sample Number: 1026291 for lab sample #1 Start Date: 7.17.07 Time: 13:40
End Date: 7-24-07 Time: 1100

Concentration	Replicate		TEST DAY 0	1	2	3	4	5	6	7
Control	A	B9	10	10	10	9 D	9	9	9	8 D
	B	B10	10	10	10	10	10	10	10	10
	C	B11	10	10	10	10	10	10	9 D	9
	D	B12	10	10	10	10	10	10	10	10
100 % sample concentration	A	B13	10	10	10	10	9 D	9	9	9
	B	B14	10	10	10	10	10	10	10	10
	C	B15	10	10	10	10	10	10	10	10
	D	B16	10	10	10	10	10	10	10	10
Control	A		10							
	B		10							
	C		10							
	D		10							
% sample concentration	A		10							
	B		10							
	C		10							
	D		10							
Loaded by: JD	Checked by:			JD	JD	JD	MF	JD	JD	JD
Verified by: BK										

Comments: Survival T-test table value 1.9432 Calculated value -0.57240 6df
Control mean survival 0.925
100% mean survival 0.875

Appendix B. (continued)



Biology Laboratory Chronic Screening Bioassay Benchsheet

Parameters

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

Sample Source: PANAMA CITY BEACH WWTP #1

LIMS Sample #: 1026291 (for Lab sample #1)

Test Day			Old Sample						New Sample					
							Cond						Cond	
		Conc.	Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	(µmhos/cm) (mmhos/cm)	Salinity ppth	Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	(µmhos/cm) (mmhos/cm)	Salinity ppth
Day 0	sample:	Control							A	8.1	24.3	7.8	436	0.10
	1	100%							A	7.8	24.4	8.7	855	0.36
	Measured by:									JD	JD	JD	JD	JD
	Recorded by:									JD	JD	JD	JD	JD
Day 1	sample:	Control	B	8.1	24.4	7.5	336	0.09	B	7.7	24.7	7.8	327	0.09
	1	100%	B	7.9	24.3	7.1	(B) ~~497~~ 867	~~0.33~~ 0.37 JD	B	7.7	25.2	8.4	861	0.37
	Measured by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Recorded by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
Day 2	sample:	Control	C	7.7	24.7	@ 26.1	347	0.09	C	7.9	25.1	7.7	351	0.11
	2	100%	C	7.7	25.2	70 3451	867	0.37	C	7.7	25.6	7.9	865	0.37
	Measured by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Recorded by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
Day 3	sample:	Control	D	7.9	24.3	6.5	336	0.10	D	8.0	24.1	7.8	334	0.09
	2	100%	D	7.7	24.3	6.1	852	0.37	D	7.8	24.3	8.4	842	0.36
	Measured by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Recorded by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
Day 4	sample:	Control	A	7.6	24.9	6.4	343	<1	A	7.8 ~~7.9~~	~~7.8~~ 7.8	7.8	337	<1
	3	100%	A	7.7	25.0	6.5	860	<1	A	7.8	~~7.7~~ 7.7	7.7	863	<1
	Measured by:			MF	MF	MF	MF	MF		MF	MF	MF	MF	MF
	Recorded by:			MF	MF	MF	MF	MF		MF	MF	MF	MF	MF
Day 5	sample:	Control	B	7.6	24.5	5.9	335	<1	B	7.9	24.2	25	336	<1
	3	100%	B	7.7	24.5	5.9	867	<1	B	7.9	24.2	26	864	<1
	Measured by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Recorded by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
Day 6	sample:	Control	C	7.7	24.3	6.9	352	<1	C	8.0	24.2	7.4	342	<1
	3	100%	C	7.7	24.4	6.3	876	<1	C	7.7	24.3	8.2	874	<1
	Measured by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Recorded by:			JD	JD	JD	JD	JD		JD	JD²	JD	JD	JD
Day 7	sample:	Control	D	7.6	24.3	6.4	340	<1						
	3	100%	D	7.7	24.3	6.5	876	<1						
	Measured by:			JD	JD	JD	JD	JD						
	Recorded by:			JD	JD	JD	JD	JD						

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

Comments: (B) Transcription error 1086 Day 1 female cond: 867; sal: 0.38 JD 24 JUN 07

(B) Transcription error, both D.O.'s Day 2 old sample JD.

revised 6/24/05 mf

Page 000015

Appendix B. (continued)

FDEP Biology Laboratory - Chronic Screen Bench Sheet

Facility: PANAMA CITY BEACH WWTP #1

LIMS Sample Number: 1026291 for lab sample #1

Concentration	Replicate	Pan #	Pan wt. (g)	Pan + Fish (g)	Fish wt. (g)	Original # Fish	Mean wt. (mg)
			mean wt = fish wt divided by 10 convert g to mg: move decimal 3 places to right				
Control	A	305	0.02274	0.028340	0.005660	10	.566
	B	306	0.02267	0.028731	0.006464	10	.646
	C	307	0.02265	0.027733	0.005468	10	.546
	D	308	0.02267	0.028342	0.005675	10	.575
100 % sample	A	309	0.02131	0.027761	0.006632	10	.663
	B	310	0.02287	0.030942	0.008055	10	.805
	C	311	0.02296	0.030555	0.008259	10	.825
	D	312	0.021766	0.029520	0.007754	10	.775
Control	A					10	
	B					10	
	C					10	
	D					10	
% sample	A					10	
	B					10	
	C					10	
	D					10	
	Weighed by initials:		SPC	TD			

Growth	%CV	PMSD
Control	11.7%	16.9%

Growth	Table	Calculated	dF
T-test	1.94300	-7.52477	6

mean control weight = 0.518
mean 100% sample weight = 0.723

Drying	Etc 24:00
Temperature °C:	098°C
Hours:	24

Tare Weighing Date:	Final Weighing Date:		Measured Value		S-weight Value
Tare Pan 1 after Pan 5	0.02626 @ 0.02626	S-weights	0.025000	@	0.025000
Tare Pan 1 after Pan 8	0.02623 @ 0.02626	at tare	0.025661	@	0.025000
Final Pan 1 after Pan 5	0.02340 @ 0.02340	S-weights	0.010000	@	0.010000
Final Pan 1 after Pan 8	0.02340 @ 0.02340	at final	0.050003	@	0.050000

Comments:

Test Page 4 of 4 PAGE 000016 revised 08/24/06 MF/SP

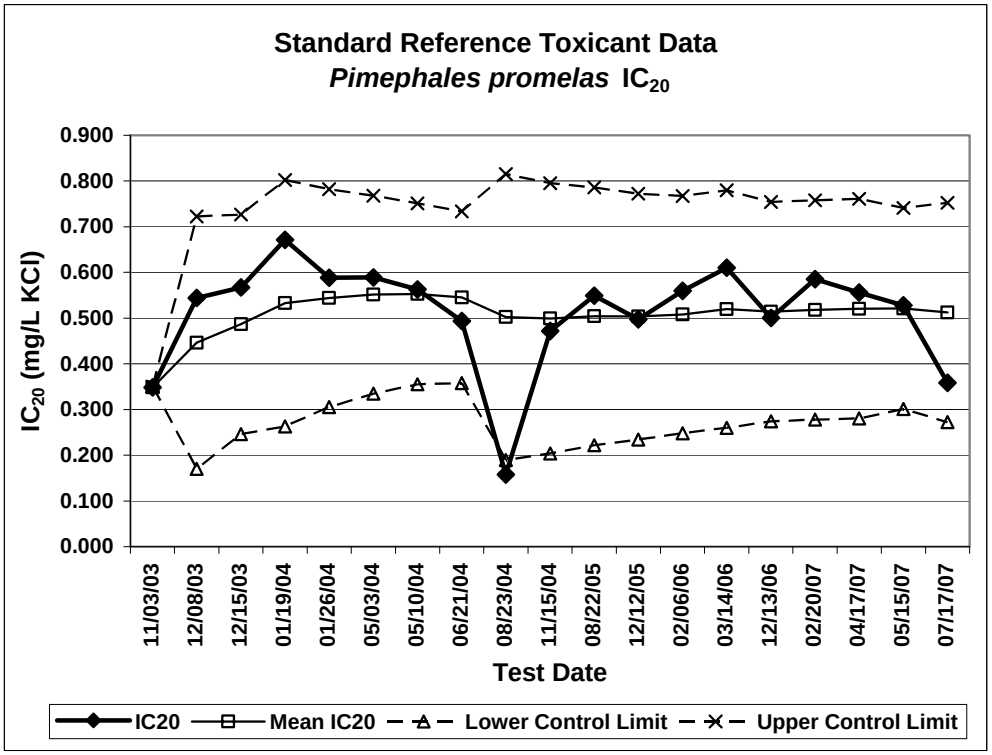
Appendix C. SRT Bench Sheets and Statistical Analysis

Florida Department of Environmental Protection
Bureau of Laboratories

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

Date	IC20	Mean IC20	Std Dev	Lower Control Limit	Upper Control Limit	Date
11/03/03	0.349	0.349	0.35	0.350	0.350	11/03/03
12/08/03	0.544	0.446	0.14	0.170	0.723	12/08/03
12/15/03	0.567	0.487	0.12	0.246	0.727	12/15/03
01/19/04	0.671	0.533	0.13	0.263	0.802	01/19/04
01/26/04	0.588	0.544	0.12	0.305	0.782	01/26/04
05/03/04	0.589	0.551	0.11	0.335	0.768	05/03/04
05/10/04	0.563	0.553	0.10	0.355	0.751	05/10/04
06/21/04	0.494	0.546	0.09	0.358	0.734	06/21/04
08/23/04	0.157	0.503	0.16	0.190	0.815	08/23/04
11/15/04	0.472	0.499	0.15	0.204	0.795	11/15/04
08/22/05	0.549	0.504	0.14	0.222	0.786	08/22/05
12/12/05	0.497	0.503	0.13	0.234	0.772	12/12/05
02/06/06	0.559	0.508	0.13	0.248	0.767	02/06/06
03/14/06	0.610	0.520	0.13	0.260	0.780	03/14/06
12/13/06	0.501	0.514	0.12	0.274	0.754	12/13/06
02/20/07	0.585	0.518	0.12	0.278	0.758	02/20/07
04/17/07	0.556	0.521	0.12	0.281	0.761	04/17/07
05/15/07	0.528	0.521	0.11	0.301	0.741	05/15/07
07/17/07	0.358	0.513	0.12	0.273	0.753	07/17/07

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



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: RMW1 7-14-07 Test Days Used: mf 0-6.5

Diluent/ Batch: 7-18-07 Test Days Used: mf 6

Toxicant/ Batch #: 7-14-07

Artemia Lot #: GSL53690

Start Date: 7-17-07 Time: 13:30

End Date: 7-24-07 Time: 1100

Organism Batch #/ Age: 7-17-07 / 1 Day (24hours)

Artemia Batch #	Day 2 7-19-07	Day 5 7-22-07
Day 0 7-17-07	Day 3 7-20-07	Day 6 7-23-07
Day1 7-18-07	Day 4 7-21-07	

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 7-14-07	Diluent 7-18-07 (or other)	Method	Measured by	Verified by
Total Residual Cl_2 (mg/L):	2.03	<0.03	HACH	PDV	JJ
Alkalinity (mg/L as $CaCO_3$):	80	78	HACH	PDV	JJ
Hardness (mg/L as $CaCO_3$):	94	93	HACH	PDV	JJ
Total Ammonia (mg/L as N):	<0.017	<0.017	DENVER	MF	JJ
Conductivity (umhos-cm) mmhos-cm:	325	335	METTLER	MF TD	MF

Statistics	
Growth NOEC:	mf 0.25
Growth LOEC:	0.5
Growth IC_{20}:	0.3584
Growth IC_{25}:	0.4171
Ctrl % CV:	13.95
Dunnetts PMSD:	27.4
Survival NOEC:	0.25
Survival LOEC:	0.5

Light Intensity : 50 - 100 ft. candles

Photoperiod : 16 light 8 dark

Temperature Range °C:

Incubator # 2 min. 24.2 max. 25.3 mean 24.8

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

Room B246 min. 24.9 max. 26.5 mean 25.7

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

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

Investigators' signatures

James Daniel

Marshall Fairbrother

Patel Vichail

Nicole Wellendorf

REVIEWER

Comments:

Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or Menidia beryllina Survival

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

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

			TEST DAY							
Concentration	Replicate	Chamber	0	1	2	3	4	5	6	7
Control	A	A1	10	10	9/10	9	9	9	9	9
	B	A2	10	10	10	10	10	10	10	10
	C	A3	10	10	10	10	10	10	9/10	9
	D	A4	10	10	10	10	10	10	10	10
0.0625	A	A5	10	10	10	10	10	10	~~9~~ 10	10
	B	A6	10	10	10	9/10	9	9	9	9
	C	A7	10	10	10	10	10	10	10	10
	D	A8	10	10	10	10	10	10	10	10
0.125	A	A9	10	10	9/10	9	9	9	9	9
	B	A10	10	10	10	10	10	10	10	10
	C	A11	10	10	10	10	10	10	10	10
	D	A12	10	10	10	10	10	10	10	10
0.25	A	A13	10	10	10	9/10	9	9	9	9
	B	A14	10	10	10	10	10	10	10	10
	C	A15	10	10	10	10	10	10	10	10
	D	A16	10	10	10	10	10	10	9/10	9
0.5	A	A17	10	10	10	10	9	8/10	8	8
	B	A18	10	9/10	7/10	6/10	6	4/10	4	4
	C	A19	10	9/10	9	9	3/10	7/10	6/10	5/10
	D	A20	10	10	9/10	9	0	9	9	9
1.0	A	A21	10	1/10	0/10	—	—	—	—	—
	B	A22	10	3/10	2	2	2	0/10	—	—
	C	A23	10	0/10	—	—	—	—	—	—
	D	A24	10	0/10	—	—	—	—	—	—
	A		10							
	B		10							
	C		10							
	D		10							
Loaded by (0 hr): JD		Checked by*:		JD	JD	JD	MF	JD	JD	JD
		Concentrations prepared by:		JD	JD	JD	MF	JD	JD	JD

Comments: verified by BA

*verified by for 0 hour

Test Page 2 of 6 PAGE 2 revised 8/24/06 MF/SP

2

Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or *Menidia beryllina* Parameters

Start Date: 7.17.07 Time: 1340 30

End Date: 7.24-07 Time: 1100

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

Concentration: µg/L (circle one)

circle µmhos or mmhos

Test Day		Before Renewal					Test Start and After Renewal				
	Test	pH	Temp	DO	Conductivity	Test	pH	Temp	DO	Conductivity	
↓	Concentration	Replicate	(su)	(°C)	(mg/L)	µmhos/mmhos	Replicate	(su)	(°C)	(mg/L)	µmhos/mmhos
Day 0	Control					A	8.1	24.7	7.0	0.325	
	.0625					A	8.2	24.8	7.5	0.452	
	.125					A	8.2	24.7	7.6	0.633	
	.25					A	8.2	24.8	7.8	0.328	
	.50					A	8.2	24.8	7.9	0.1335	
	1.0					A	8.2	24.9	7.8	2.33	
						A					
	Measured by:						JJ	JJ	JJ	JJ	
	Recorded by:						JJ	JJ	JJ	JJ	
↓	Concentration	Replicate	pH	Temp	DO	Conductivity	Replicate	pH	Temp	DO	Conductivity
Day 1	Control	B	7.9	24.6	7.5	0.329	B	8.1	24.7	7.9	0.325
	.0625	B	7.8	24.4	6.9	0.453	B	8.1	24.7	7.8	0.464
	.125	B	7.8	24.4	6.6	0.641	B	8.1	24.6	7.7	0.605
	.25	B	7.8	24.3	6.7	0.324	B	8.1	24.6	7.7	0.353
	.5	B	7.8	24.3	6.9	1.32	B	8.1	24.6	7.7	1.32
	1.0	B	7.8	24.2	6.8	2.34	B	8.1	24.6	7.6	2.33
		B					B				
	Measured by:		JJ	JJ	JJ	JJ		JJ	JJ	JJ	JJ
	Recorded by:		JJ	JJ	JJ	JJ		JJ	JJ	JJ	JJ
↓	Concentration	Replicate	pH	Temp	DO	Conductivity	Replicate	pH	Temp	DO	Conductivity
Day 2	Control	C	7.7	24.7	6.4	0.336	C	8.0	24.9	7.3	0.333
	.0625	C	7.7	24.8	6.6	0.482	C	8.1	24.8	7.4	0.473
	.125	C	7.5	24.6	4.9	0.629	C	8.0	24.8	7.3	0.612
	.25	C	7.7	24.6	6.7	0.333	C	8.1	24.7	7.4	0.367
	.5	C	7.7	24.8	6.7	1.36	C	8.0	24.7	7.5	1.36
	1.0	~~D~~ B JJ	7.7	24.7	6.6	2.34	B JJ C	8.1	24.9	7.7	2.38
		C					C				
	Measured by:		JJ	JJ	JJ	JJ		JJ	JJ	JJ	JJ
	Recorded by:		JJ	JJ	JJ	JJ		JJ	JJ	JJ	JJ
↓	Concentration	Replicate	pH	Temp	DO	Conductivity	Replicate	pH	Temp	DO	Conductivity
Day 3	Control	D	7.8	24.4	6.4	0.341	D	8.1	24.3	7.9	0.332
	.0625	D	7.8	24.3	6.3	0.484	D	8.1	24.5	7.7	0.460
	.125	D	7.8	24.4	6.4	0.629	D	8.1	24.4	7.6	0.599
	.25	D	7.8	24.4	6.4	0.839	D	8.1	24.4	7.7	0.845
	.5	D	7.7	24.4	6.4	1.38	D	8.1	24.4	7.6	1.31
	1.0	~~B~~ JJ D	7.7	24.5	6.3	2.42	B JJ D	8.1	24.3	7.5	2.35
		D					D				
	Measured by:		JJ	JJ	JJ	JJ		JJ	JJ	JJ	JJ
	Recorded by:		JJ	JJ	JJ	JJ		JJ	JJ	JJ	JJ

Comments:

Test Page 3 of 6

PAGE 3

revised 8/24/06 MF/SP

Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or *Menidia beryllina* Parameters

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

Concentration: µg/L (circle one)

circle µmhos or mmhos

Test Day		Before Renewal					After Renewal				
↓	Concentration	Test Replicate	pH (su)	Temp (°C)	DO (mg/L)	Conductivity µmhos (mmhos)	Test Replicate	pH (su)	Temp (°C)	DO (mg/L)	Conductivity µmhos (mmhos)
Day 4	Control	A	7.6	25.4	6.3	0.340	A	7.9	24.8	7.2	0.335
	0.0625	A	7.6	25.1	6.6	0.467	A	7.9	24.8	7.5	0.468
	0.125	A	7.6	25.3	6.7	0.610	A	7.9	24.9	7.3	0.596
	0.25	A	7.6	25.2	6.7	0.863	A	7.9	25.0	7.4	0.848
	0.5	A	7.6	25.1	6.7	1.257	A	7.9	25.0	7.1	1.352
	1.0	mix B	7.7	24.8	6.6	2.42	mix B	7.9	24.9	7.1	2.35
		A					A				
	Measured by:		mf	mf	mf	mf		mf	mf	mf	mf
	Recorded by:										
↓	Concentration	Replicate	pH	Temp	DO	Conductivity	Replicate	pH	Temp	DO	Conductivity
Day 5	Control	B	7.5	24.2	5.5	.343	B	7.8	24.0	7.3	0.339
	0.0625	B	7.5	24.1	5.7	0.476	B	7.9	24.0	7.3	0.472
	0.125	B	7.5	24.2	5.7	0.665	B	7.8	24.0	7.2	0.599
	0.25	B	7.6	24.2	6.1	0.862	B	7.9	24.1	7.2	0.855
	0.5	B	7.6	24.4	6.2	1.37	B	7.9	24.1	7.3	1.37
	1.0	B	7.5	24.5	5.9	2.38	B	not	available		
		B					B				
	Measured by:		JD	JD	JD	JD		JD	JD	JD	JD
	Recorded by:		JD	JD	JD	JD		JD	JD	JD	JD
↓	Concentration	Replicate	pH	Temp	DO	Conductivity	Replicate	pH	Temp	DO	Conductivity
Day 6	Control	C	7.7	24.2	6.2	0.352	C	7.9	24.4	7.4	0.338
	0.0625	C	7.7	24.1	6.6	0.464	C	8.0	24.5	7.5	0.475
	0.125	C	7.6	24.2	6.1	0.610	C	8.0	24.5	7.5	0.591
	0.25	C	7.7	24.3	5.9	0.848	C	8.0	24.5	7.5	0.856
	0.5	C	7.7	24.0	6.2	1.40	C	8.0	24.5	7.4	1.37
		C					C				
		C					C				
	Measured by:		JD	JD	JD	JD		JD	JD	JD	JD
	Recorded by:		JD	JD	JD	JD		JD	JD	JD	JD
↓	Concentration	Replicate	pH	Temp	DO	Conductivity	Replicate	pH	Temp	DO	Conductivity
Day 7	Control	D	7.8	24.8	6.2	0.335	D				
	0.0625	D	7.7	24.6	6.1	0.473	D				
	0.125	D	7.7	24.7	6.1	0.568	D				
	0.25	D	7.7	24.5	6.1	0.872	D				
	0.5	D	7.7	24.4	6.1	1.37	D				
		D					D				
		D					D				
	Measured by:		JD	JD	JD	JD					
	Recorded by:		JD	JD	JD	JD					

Comments:

Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or *Menidia beryllina* Weights

SOP TA06_21

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

Concentration: µg/L g/L (circle one)

mean wt = fish wt divided by 10

convert g to mg: move decimal 3 places to right

Concentration	Replicate	Pan #	Pan wt. (g)	Pan + Fish (g)	Fish wt. (g)	Original # of fish	Mean wt. (mg)
Control	A	313	0.02181	0.02521	0.0004	10	.040 ~~.004~~
	B	314	0.02138	0.02926	0.00788	10	.788
	C	315	0.02157	0.02766	0.00609	10	.609
	D	316	0.02125	0.02709	0.00584	10	.584
.0625	A	317	0.02204	0.02837	0.00633	10	.634
	B	318	0.02213	0.02774	0.00561	10	.561
	C	319	0.02223	0.03001	0.00778	10	.778
	D	320	0.02167	0.02965	0.00798	10	.798
.125	A	321	0.02165	0.02832	0.00667	10	.667
	B	322	0.02150	0.02734	0.00584	10	.584
	C	323	0.02186	0.02970	0.00634	10	.634
	D	324	0.02170	0.02774	0.00604	10	.604
.25	A	325	0.02146	0.02774	0.00604	10	.604
	B	326	0.02178	0.02790	0.00612	10	.612
	C	327	0.02154	0.02769	0.00670	10	.670
	D	328	0.02130	0.02732	0.00602	10	.602
.5	A	329	0.02043	0.02513	0.00470	10	.470
	B	330	0.02110	0.02378	0.00283	10	.283
	C	331	0.02095	0.02459	0.00364	10	.364
	D	332	0.02110	0.02706	0.00646	10	.646
	A					10	
	B					10	
	C					10	
	D					10	
	A					10	
	B					10	
	C					10	
	D					10	
			Weighed by:	PDI	DJ		

Comments:

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

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

Appendix C. (continued)

FDEP Biology Laboratory - Chronic SRT Benchsheet

Pimephales promelas or *Menidia beryllina* QC

SOPs TA07_09, TA07_14 and TA06_21

Empty Pan Weights Date: 6.14.07

	Pan 1 wt.		Pan 1 initial wt.
after Pan 5	0.02626	@	0.02626
after Pan 10	0.02624	@	0.02626
after Pan 15	0.02624	@	0.02626
after Pan 20	0.02624	@	0.02626
after Pan 25	0.02623	@	0.02626
after Pan 30	0.02627	@	0.02626
after Pan 35		@	
after Pan 40		@	
after Pan 45		@	
after Pan 48		@	

	Measured Value		S-weight Value
S-weights	0.05005	@	0.05000
	0.02003	@	0.02000

Fish + Pan Weights Date: 7.26.07

	Pan 1 wt.		Pan 1 initial wt.
after Pan 5	0.02821	@	0.02821
after Pan 10	0.02821	@	0.02821
after Pan 15	0.02821	@	0.02821
after Pan 20	0.02822	@	0.02821
after Pan 25	0.02821	@	0.02821
after Pan 30	0.02821	@	0.02821
after Pan 35		@	
after Pan 40		@	
after Pan 45		@	
after Pan 48		@	

	Measured Value		S-weight Value
S-weights	0.01001	@	0.01000
	0.05003	@	0.05000

Drying Oven ID: EPA 340 C

Temperature °C: 105°C

Drying Hours: 10

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

Comments:

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

Appendix C. (continued)

Larval Fish Growth and Survival Test-7 Day Survival

Start Date:	7/17/2007	Test ID:	1pancity07	Sample ID:	FL0021512
End Date:	7/24/2007	Lab ID:	Panama City Beach WWTF	Sample Type:	EFF1-POTW
Sample Date:		Protocol:	EPAF 94-EPA/600/4-91/002	Test Species:	PP-Pimephales promelas
Comments:	Panama City Beach Chronic Screening				

Conc-%	1	2	3	4
D-Control	0.8000	1.0000	0.9000	1.0000
100	0.9000	1.0000	1.0000	1.0000

			Transform: Arcsin Square Root					1-Tailed		
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD
D-Control	0.9250	1.0000	1.2951	1.1071	1.4120	11.347	4			
100	0.9750	1.0541	1.3713	1.2490	1.4120	5.942	4	-0.907	1.943	0.1633

Auxiliary Tests	Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.894791		0.749		-0.73774	-0.55197
F-Test indicates equal variances (p = 0.36)	3.252362		47.46723			
Hypothesis Test (1-tail, 0.05)	**MSDu**	**MSDp**	**MSB**	**MSE**	**F-Prob**	**df**
Homoscedastic t Test indicates no significant differences Treatments vs D-Control	0.106528	0.115057	0.011618	0.014117	0.399285	1, 6

Larval Fish Growth and Survival Test-7 Day Growth

Start Date:	7/17/2007	Test ID:	1pancity07	Sample ID:	FL0021512
End Date:	7/24/2007	Lab ID:	Panama City Beach WWTF	Sample Type:	EFF1-POTW
Sample Date:		Protocol:	EPAF 94-EPA/600/4-91/002	Test Species:	PP-Pimephales promelas
Comments:	Panama City Beach Chronic Screening				

Conc-%	1	2	3	4
D-Control	0.5660	0.4640	0.4680	0.5750
100	0.6220	0.7550	0.7590	0.7540

			Transform: Untransformed					1-Tailed		
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD
D-Control	0.5183	1.0000	0.5183	0.4640	0.5750	11.668	4			
100	0.7225	1.3941	0.7225	0.6220	0.7590	9.278	4	-4.525	1.943	0.0877

Auxiliary Tests	Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.831896		0.749		-0.82656	-1.06392
F-Test indicates equal variances (p = 0.87)	1.229037		47.46723			
Hypothesis Test (1-tail, 0.05)	**MSDu**	**MSDp**	**MSB**	**MSE**	**F-Prob**	**df**
Homoscedastic t Test indicates no significant differences Treatments vs D-Control	0.087712	0.169247	0.083436	0.004075	0.003996	1, 6

Appendix C. (continued)

Start Date:	7/17/2007	Test ID:	1julyppsrt	Sample ID:	SRT for PCB and Quincy
End Date:	7/24/2007	Lab ID:	Chronic SRT P. prom. July 17 2	Sample Type:	KCL-Potassium chloride
Sample Date:		Protocol:	EPAFW02-EPA/821/R-02-013	Test Species:	PP-Pimephales promelas
Comments:	Chronic SRT for Panama City Beach and Quincy chronic bioassays				

Conc-gm/L	1	2	3	4
D-Control	0.6400	0.7880	0.6090	0.5840
0.0625	0.6340	0.5610	0.7780	0.7580
0.125	0.6670	0.5780	0.6840	0.6040
0.25	0.6040	0.6120	0.6700	0.5020
0.5	0.4700	0.2880	0.3640	0.6960
1	0.0000	0.0000	0.0000	0.0000

			Transform: Untransformed					Isotonic	
Conc-gm/L	Mean	N-Mean	Mean	Min	Max	CV%	N	Mean	N-Mean
D-Control	0.6553	1.0000	0.6553	0.5840	0.7880	13.951	4	0.6690	1.0000
0.0625	0.6828	1.0420	0.6828	0.5610	0.7780	15.112	4	0.6690	1.0000
0.125	0.6333	0.9664	0.6333	0.5780	0.6840	7.960	4	0.6333	0.9466
0.25	0.5970	0.9111	0.5970	0.5020	0.6700	11.697	4	0.5970	0.8924
0.5	0.4545	0.6936	0.4545	0.2880	0.6960	39.045	4	0.4545	0.6794
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	4	0.0000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.975213	0.868	0.634543	0.820416
Bartlett's Test indicates equal variances (p = 0.31)	4.74499	13.2767		

Linear Interpolation (200 Resamples)

Point	gm/L	SD	95% CL(Exp)		Skew
IC05	0.1210	0.0826	0.0000	0.3814	1.3741
IC10	0.2324	0.0970	0.0000	0.4847	0.5696
IC15	0.2997	0.1022	0.0000	0.6481	0.3223
IC20	0.3584	0.0958	0.0971	0.6583	0.3953
IC25	0.4171	0.0911	0.1479	0.6685	0.1173
IC40	0.5584	0.0719	0.3214	0.7200	-0.1760
IC50	0.6320	0.0649	0.3841	0.7667	-0.4063

Appendix D. Test Organism Receipt

1300 Blue Spruce Drive, Suite C
Fort Collins, Colorado 80524

Toll Free: 800/331-5916
Tel:970/484-5091 Fax:970/484-2514

ORGANISM HISTORY

DATE: 7/16/07

SPECIES: *Pimephales promelas*

AGE: N/A

LIFE STAGE: Embryo

HATCH DATE: 7/16/07

BEGAN FEEDING: N/A

FOOD: N/A

Water Chemistry Record:	Current	Range
TEMPERATURE:	24°C	--
SALINITY/CONDUCTIVITY:	--	--
TOTAL HARDNESS (as $CaCO_3$):	128 mg/l	--
TOTAL ALKALINITY (as $CaCO_3$):	90 mg/l	--
pH:	7.96	--

Comments:

Facility Supervisor

Aquatic BioSystems, Inc • Quality Research Organisms

Appendix E. Chemical Analyses performed on the effluent from the Panama City Beach Wastewater Treatment Facility #1 Outfall D-001, sampled on July 16, 2007.

Date Sampled	Field ID	Analysis Group	Components	Results	Remarks	Units	MDL	PQL
7/16/2007 10:00	Effluent	AGP/LN	Algal Growth Potential	133		mg DryWt/L	0.3	0.9
7/16/2007 10:00	Effluent	AGP/LN	Algal Growth Potential-Salinity Adjusted	46.4		mg DryWt/L	3	3
7/16/2007 10:00	Effluent	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	0.52	IY	mg/L	0.2	2
7/16/2007 10:00	Effluent	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	1.6	I	ug/L	0.55	1.7
7/16/2007 10:00	Effluent	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.24	U	ug/L	0.24	0.71
7/16/2007 10:00	Effluent	Toxicology	Bioassay-Chronic-Scrn-FW-C.dubia, NOEC	No Result		NOEC		
7/16/2007 10:00	Effluent	Toxicology	Bioassay-Chronic-Scrn-FW-Fish, NOEC	100		NOEC		
7/16/2007 10:00	Effluent	Metals	Calcium	27.4		mg/L	0.02	0.08
7/16/2007 10:00	Effluent	Metals	Iron	15	I	ug/L	5	20
7/16/2007 10:00	Effluent	Metals	Magnesium	8.4		mg/L	0.005	0.02
7/16/2007 10:00	Effluent	Metals	Zinc	46		ug/L	5	20
7/16/2007 10:00	Effluent	Metals	Aluminum	93		ug/L	5	20
7/16/2007 10:00	Effluent	Metals	Arsenic	0.5	U	ug/L	0.5	2
7/16/2007 10:00	Effluent	Metals	Cadmium	0.032	I	ug/L	0.02	0.08
7/16/2007 10:00	Effluent	Metals	Chromium	1	U	ug/L	1	4
7/16/2007 10:00	Effluent	Metals	Copper	2.36		ug/L	0.25	1
7/16/2007 10:00	Effluent	Metals	Lead	0.2	U	ug/L	0.2	0.8
7/16/2007 10:00	Effluent	Metals	Nickel	2.53		ug/L	0.25	1
7/16/2007 10:00	Effluent	Metals	Selenium	0.5	U	ug/L	0.5	2
7/16/2007 10:00	Effluent	Metals	Silver	0.025	U	ug/L	0.025	0.1
7/16/2007 10:00	Effluent	Nutrients	Turbidity	0.45	Y	NTU	0.05	0.05
7/16/2007 10:00	Effluent	Nutrients	Specific_Conductance	813	Y	umhos/cm	2	8
7/16/2007 10:00	Effluent	Nutrients	Ammonia-N	0.03	Y	mg N/L	0.01	0.02
7/16/2007 10:00	Effluent	Nutrients	NO2NO3-N	2.7	Y	mg N/L	0.04	0.1
7/16/2007 10:00	Effluent	Nutrients	O-Phosphate-P	0.16	Y	mg P/L	0.008	0.02
7/16/2007 10:00	Effluent	Nutrients	Kjeldahl Nitrogen	0.86	Y	mg N/L	0.16	0.4
7/16/2007 10:00	Effluent	Nutrients	Total-P	0.16	Y	mg P/L	0.02	0.06
7/16/2007 10:00	Effluent	Nutrients	TSS	4	UY	mg/L	4	16
7/16/2007 10:00	Effluent	Pesticides	Alachlor	0.58	UY	ug/L	0.58	2.3
7/16/2007 10:00	Effluent	Pesticides	Ametryn	0.048	UY	ug/L	0.048	0.19
7/16/2007 10:00	Effluent	Pesticides	Atrazine	0.048	UY	ug/L	0.048	0.19
7/16/2007 10:00	Effluent	Pesticides	Azinphos Methyl	0.19	UY	ug/L	0.19	0.76
7/16/2007 10:00	Effluent	Pesticides	Bromacil	0.19	UY	ug/L	0.19	0.76
7/16/2007 10:00	Effluent	Pesticides	Butylate	0.19	UY	ug/L	0.19	0.76

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Results	Remarks	Units	MDL	PQL
7/16/2007 10:00	Effluent	Pesticides	Chlorpyrifos Ethyl	0.048	UY	ug/L	0.048	0.19
7/16/2007 10:00	Effluent	Pesticides	Chlorpyrifos Methyl	0.096	UY	ug/L	0.096	0.38
7/16/2007 10:00	Effluent	Pesticides	Diazinon	0.048	UYJ	ug/L	0.048	0.19
7/16/2007 10:00	Effluent	Pesticides	Ethion	0.048	UY	ug/L	0.048	0.19
7/16/2007 10:00	Effluent	Pesticides	Ethoprop	0.096	UY	ug/L	0.096	0.38
7/16/2007 10:00	Effluent	Pesticides	Fenamiphos	0.19	UY	ug/L	0.19	0.76
7/16/2007 10:00	Effluent	Pesticides	Fonofos	0.096	UY	ug/L	0.096	0.38
7/16/2007 10:00	Effluent	Pesticides	Hexazinone	0.096	UY	ug/L	0.096	0.38
7/16/2007 10:00	Effluent	Pesticides	Malathion	0.14	UY	ug/L	0.14	0.56
7/16/2007 10:00	Effluent	Pesticides	Metalaxyl	0.24	UYJ	ug/L	0.24	0.96
7/16/2007 10:00	Effluent	Pesticides	Metolachlor	0.48	UY	ug/L	0.48	1.9
7/16/2007 10:00	Effluent	Pesticides	Metribuzin	0.096	UY	ug/L	0.096	0.38
7/16/2007 10:00	Effluent	Pesticides	Mevinphos	0.19	UY	ug/L	0.19	0.76
7/16/2007 10:00	Effluent	Pesticides	Naled	0.77	UYJ	ug/L	0.77	3.1
7/16/2007 10:00	Effluent	Pesticides	Norflurazon	0.14	UY	ug/L	0.14	0.56
7/16/2007 10:00	Effluent	Pesticides	Parathion Ethyl	0.14	UY	ug/L	0.14	0.56
7/16/2007 10:00	Effluent	Pesticides	Parathion Methyl	0.096	UY	ug/L	0.096	0.38
7/16/2007 10:00	Effluent	Pesticides	Phorate	0.048	UY	ug/L	0.048	0.19
7/16/2007 10:00	Effluent	Pesticides	Prometryn	0.14	UY	ug/L	0.14	0.56
7/16/2007 10:00	Effluent	Pesticides	Simazine	0.048	UY	ug/L	0.048	0.19
7/16/2007 10:00	Effluent	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	1,2-Dichlorobenzene	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	1,3-Dichlorobenzene	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	1,4-Dichlorobenzene	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	2,4-Dichlorophenol	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	2,4-Dimethylphenol	9.7	UY	ug/L	9.7	39
7/16/2007 10:00	Effluent	Priority Organic Pollutants	2,4-Dinitrophenol	15	UY	ug/L	15	58
7/16/2007 10:00	Effluent	Priority Organic Pollutants	2,4-Dinitrotoluene	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	2,6-Dinitrotoluene	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	2-Chloronaphthalene	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	2-Chlorophenol	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9	UY	ug/L	2.9	12
7/16/2007 10:00	Effluent	Priority Organic Pollutants	2-Nitrophenol	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	3,3'-Dichlorobenzidine	39	UY	ug/L	39	160

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Results	Remarks	Units	MDL	PQL
7/16/2007 10:00	Effluent	Priority Organic Pollutants	4,4'-DDD	1.5	UY	ug/L	1.5	5.8
7/16/2007 10:00	Effluent	Priority Organic Pollutants	4,4'-DDE	1.5	UY	ug/L	1.5	5.8
7/16/2007 10:00	Effluent	Priority Organic Pollutants	4,4'-DDT	1.5	UY	ug/L	1.5	5.8
7/16/2007 10:00	Effluent	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	UY	ug/L	1.9	7.8
7/16/2007 10:00	Effluent	Priority Organic Pollutants	4-Nitrophenol	15	UY	ug/L	15	58
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Acenaphthene	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Acenaphthylene	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Aldrin	1.5	UY	ug/L	1.5	5.8
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Anthracene	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Benzidine	97	UYJ	ug/L	97	390
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Benzo(a)anthracene	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Benzo(a)pyrene	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Benzo(b)fluoranthene	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Benzo(k)fluoranthene	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9	UY	ug/L	2.9	12
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	15	UY	ug/L	15	58
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Butyl benzyl phthalate	4.9	UY	ug/L	4.9	19
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Chrysene	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Di-n-butyl phthalate	4.9	UY	ug/L	4.9	19
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Di-n-octyl phthalate	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Dieldrin	1.5	UY	ug/L	1.5	5.8
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Diethyl phthalate	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Dimethyl phthalate	49	UY	ug/L	49	190
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Endosulfan I	3.9	UY	ug/L	3.9	16
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Endosulfan II	3.9	UY	ug/L	3.9	16
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Endosulfan sulfate	1.5	UY	ug/L	1.5	5.8
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Endrin	1.5	UY	ug/L	1.5	5.8
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Endrin aldehyde	3.9	UY	ug/L	3.9	16
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Fluoranthene	0.97	UY	ug/L	0.97	3.9

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Results	Remarks	Units	MDL	PQL
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Fluorene	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Heptachlor	1.5	UY	ug/L	1.5	5.8
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Heptachlor epoxide	1.5	UY	ug/L	1.5	5.8
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Hexachlorobenzene	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Hexachlorobutadiene	2.9	UY	ug/L	2.9	12
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9	UY	ug/L	2.9	12
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Hexachloroethane	2.9	UY	ug/L	2.9	12
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Isophorone	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	UY	ug/L	1.9	7.8
7/16/2007 10:00	Effluent	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	UY	ug/L	1.9	7.8
7/16/2007 10:00	Effluent	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9	UY	ug/L	2.9	12
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Naphthalene	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Nitrobenzene	1.9	UY	ug/L	1.9	7.8
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Pentachlorophenol	2.9	UY	ug/L	2.9	12
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Phenanthrene	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Phenol	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	Pyrene	0.97	UY	ug/L	0.97	3.9
7/16/2007 10:00	Effluent	Priority Organic Pollutants	alpha-BHC	1.5	UY	ug/L	1.5	5.8
7/16/2007 10:00	Effluent	Priority Organic Pollutants	beta-BHC	1.5	UY	ug/L	1.5	5.8
7/16/2007 10:00	Effluent	Priority Organic Pollutants	delta-BHC	1.5	UY	ug/L	1.5	5.8
7/16/2007 10:00	Effluent	Priority Organic Pollutants	gamma-BHC	1.5	UY	ug/L	1.5	5.8
7/16/2007 10:00	Effluent	Field Parameters	Dissolved Oxygen	9.17		mg/L		
7/16/2007 10:00	Effluent	Field Parameters	Specific Conductance	860		umhos/cm		
7/16/2007 10:00	Effluent	Field Parameters	Temperature	30.45		C		
7/16/2007 10:00	Effluent	Field Parameters	pH	7.18				
7/16/2007 6:45	Blank	Metals	Calcium	0.044	I	mg/L	0.02	0.08
7/16/2007 6:45	Blank	Metals	Iron	5	U	ug/L	5	20
7/16/2007 6:45	Blank	Metals	Magnesium	0.005	U	mg/L	0.005	0.02
7/16/2007 6:45	Blank	Metals	Zinc	5	U	ug/L	5	20
7/16/2007 6:45	Blank	Metals	Aluminum	27		ug/L	5	20
7/16/2007 6:45	Blank	Metals	Arsenic	0.5	U	ug/L	0.5	2
7/16/2007 6:45	Blank	Metals	Cadmium	0.02	U	ug/L	0.02	0.08
7/16/2007 6:45	Blank	Metals	Chromium	1	U	ug/L	1	4
7/16/2007 6:45	Blank	Metals	Copper	0.25	U	ug/L	0.25	1

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Results	Remarks	Units	MDL	PQL
7/16/2007 6:45	Blank	Metals	Lead	0.2	U	ug/L	0.2	0.8
7/16/2007 6:45	Blank	Metals	Nickel	0.25	U	ug/L	0.25	1
7/16/2007 6:45	Blank	Metals	Selenium	0.5	U	ug/L	0.5	2
7/16/2007 6:45	Blank	Metals	Silver	0.025	U	ug/L	0.025	0.1
7/16/2007 6:45	Blank	Nutrients	Ammonia-N	0.013	IY	mg N/L	0.01	0.02
7/16/2007 6:45	Blank	Nutrients	NO2NO3-N	0.004	UY	mg N/L	0.004	0.01
7/16/2007 6:45	Blank	Nutrients	O-Phosphate-P	0.004	UY	mg P/L	0.004	0.01
7/16/2007 6:45	Blank	Nutrients	Kjeldahl Nitrogen	0.08	UY	mg N/L	0.08	0.2
7/16/2007 6:45	Blank	Nutrients	Total-P	0.02	UY	mg P/L	0.02	0.06
7/16/2007 6:45	Blank	Pesticides	Alachlor	0.59	UY	ug/L	0.59	2.4
7/16/2007 6:45	Blank	Pesticides	Ametryn	0.049	UY	ug/L	0.049	0.2
7/16/2007 6:45	Blank	Pesticides	Atrazine	0.049	UY	ug/L	0.049	0.2
7/16/2007 6:45	Blank	Pesticides	Azinphos Methyl	0.2	UY	ug/L	0.2	0.8
7/16/2007 6:45	Blank	Pesticides	Bromacil	0.2	UY	ug/L	0.2	0.8
7/16/2007 6:45	Blank	Pesticides	Butylate	0.2	UY	ug/L	0.2	0.8
7/16/2007 6:45	Blank	Pesticides	Chlorpyrifos Ethyl	0.049	UY	ug/L	0.049	0.2
7/16/2007 6:45	Blank	Pesticides	Chlorpyrifos Methyl	0.098	UY	ug/L	0.098	0.39
7/16/2007 6:45	Blank	Pesticides	Diazinon	0.049	UYJ	ug/L	0.049	0.2
7/16/2007 6:45	Blank	Pesticides	Ethion	0.049	UY	ug/L	0.049	0.2
7/16/2007 6:45	Blank	Pesticides	Ethoprop	0.098	UY	ug/L	0.098	0.39
7/16/2007 6:45	Blank	Pesticides	Fenamiphos	0.2	UY	ug/L	0.2	0.8
7/16/2007 6:45	Blank	Pesticides	Fonofos	0.098	UY	ug/L	0.098	0.39
7/16/2007 6:45	Blank	Pesticides	Hexazinone	0.098	UY	ug/L	0.098	0.39
7/16/2007 6:45	Blank	Pesticides	Malathion	0.15	UY	ug/L	0.15	0.6
7/16/2007 6:45	Blank	Pesticides	Metalaxyl	0.25	UYJ	ug/L	0.25	1
7/16/2007 6:45	Blank	Pesticides	Metolachlor	0.49	UY	ug/L	0.49	2
7/16/2007 6:45	Blank	Pesticides	Metribuzin	0.098	UY	ug/L	0.098	0.39
7/16/2007 6:45	Blank	Pesticides	Mevinphos	0.2	UY	ug/L	0.2	0.8
7/16/2007 6:45	Blank	Pesticides	Naled	0.78	UYJ	ug/L	0.78	3.1
7/16/2007 6:45	Blank	Pesticides	Norflurazon	0.15	UY	ug/L	0.15	0.6
7/16/2007 6:45	Blank	Pesticides	Parathion Ethyl	0.15	UY	ug/L	0.15	0.6
7/16/2007 6:45	Blank	Pesticides	Parathion Methyl	0.098	UY	ug/L	0.098	0.39
7/16/2007 6:45	Blank	Pesticides	Phorate	0.049	UY	ug/L	0.049	0.2
7/16/2007 6:45	Blank	Pesticides	Prometryn	0.15	UY	ug/L	0.15	0.6
7/16/2007 6:45	Blank	Pesticides	Simazine	0.049	UY	ug/L	0.049	0.2

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Results	Remarks	Units	MDL	PQL
7/16/2007 6:45	Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	1,2-Dichlorobenzene	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	1,3-Dichlorobenzene	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	1,4-Dichlorobenzene	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	2,4-Dichlorophenol	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	2,4-Dimethylphenol	9.6	UY	ug/L	9.6	38
7/16/2007 6:45	Blank	Priority Organic Pollutants	2,4-Dinitrophenol	14	UY	ug/L	14	58
7/16/2007 6:45	Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	2-Chloronaphthalene	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	2-Chlorophenol	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9	UY	ug/L	2.9	12
7/16/2007 6:45	Blank	Priority Organic Pollutants	2-Nitrophenol	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38	UY	ug/L	38	150
7/16/2007 6:45	Blank	Priority Organic Pollutants	4,4'-DDD	1.4	UY	ug/L	1.4	5.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	4,4'-DDE	1.4	UY	ug/L	1.4	5.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	4,4'-DDT	1.4	UY	ug/L	1.4	5.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	UY	ug/L	1.9	7.7
7/16/2007 6:45	Blank	Priority Organic Pollutants	4-Nitrophenol	14	UY	ug/L	14	58
7/16/2007 6:45	Blank	Priority Organic Pollutants	Acenaphthene	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Acenaphthylene	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Aldrin	1.4	UY	ug/L	1.4	5.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Anthracene	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Benzidine	96	UYJ	ug/L	96	380
7/16/2007 6:45	Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9	UY	ug/L	2.9	12

Appendix E. (continued)

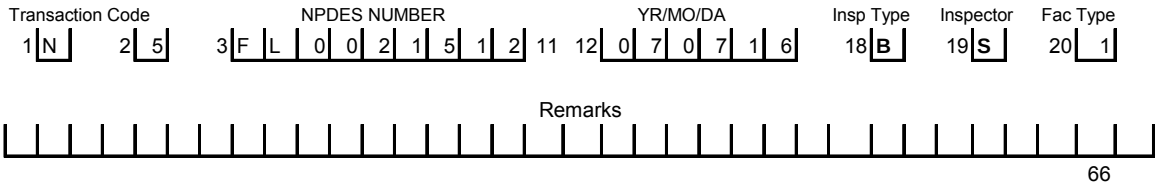
Date Sampled	Field ID	Analysis Group	Components	Results	Remarks	Units	MDL	PQL
7/16/2007 6:45	Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	14	UY	ug/L	14	58
7/16/2007 6:45	Blank	Priority Organic Pollutants	Butyl benzyl phthalate	4.8	UY	ug/L	4.8	19
7/16/2007 6:45	Blank	Priority Organic Pollutants	Chrysene	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Di-n-butyl phthalate	4.8	UY	ug/L	4.8	19
7/16/2007 6:45	Blank	Priority Organic Pollutants	Di-n-octyl phthalate	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Dieldrin	1.4	UY	ug/L	1.4	5.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Diethyl phthalate	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Dimethyl phthalate	48	UY	ug/L	48	190
7/16/2007 6:45	Blank	Priority Organic Pollutants	Endosulfan I	3.8	UY	ug/L	3.8	15
7/16/2007 6:45	Blank	Priority Organic Pollutants	Endosulfan II	3.8	UY	ug/L	3.8	15
7/16/2007 6:45	Blank	Priority Organic Pollutants	Endosulfan sulfate	1.4	UY	ug/L	1.4	5.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Endrin	1.4	UY	ug/L	1.4	5.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Endrin aldehyde	3.8	UY	ug/L	3.8	15
7/16/2007 6:45	Blank	Priority Organic Pollutants	Fluoranthene	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Fluorene	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Heptachlor	1.4	UY	ug/L	1.4	5.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Heptachlor epoxide	1.4	UY	ug/L	1.4	5.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Hexachlorobenzene	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Hexachlorobutadiene	2.9	UY	ug/L	2.9	12
7/16/2007 6:45	Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9	UY	ug/L	2.9	12
7/16/2007 6:45	Blank	Priority Organic Pollutants	Hexachloroethane	2.9	UY	ug/L	2.9	12
7/16/2007 6:45	Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Isophorone	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	UY	ug/L	1.9	7.7
7/16/2007 6:45	Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	UY	ug/L	1.9	7.7
7/16/2007 6:45	Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9	UY	ug/L	2.9	12
7/16/2007 6:45	Blank	Priority Organic Pollutants	Naphthalene	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Nitrobenzene	1.9	UY	ug/L	1.9	7.7
7/16/2007 6:45	Blank	Priority Organic Pollutants	Pentachlorophenol	2.9	UY	ug/L	2.9	12
7/16/2007 6:45	Blank	Priority Organic Pollutants	Phenanthrene	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Phenol	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	Pyrene	0.96	UY	ug/L	0.96	3.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	alpha-BHC	1.4	UY	ug/L	1.4	5.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	beta-BHC	1.4	UY	ug/L	1.4	5.8

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Results	Remarks	Units	MDL	PQL
7/16/2007 6:45	Blank	Priority Organic Pollutants	delta-BHC	1.4	UY	ug/L	1.4	5.8
7/16/2007 6:45	Blank	Priority Organic Pollutants	gamma-BHC	1.4	UY	ug/L	1.4	5.8

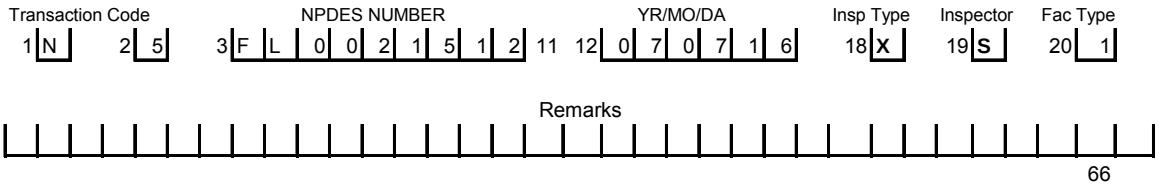
The Bioassay of the Panama City Beach Wastewater Treatment Facility #1 effluent sampled on July 16, 18, and 20, 2007. NPDES #FL0021512.

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



The Priority Pollutants Analysis of the Panama City Beach Wastewater Treatment Facility #1 effluent sampled on July 16, 2007. NPDES #FL0021512.

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



Biological Analyses of the Panama City Beach Wastewater Treatment Facility #1 effluent sampled on July 16, 2007. NPDES #FL0021512.

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

