

Effluent Quality Assessment of the

City of Waldo WWTF

Alachua County

NPDES #FL0042242

Sampled May 14, 2007

August 2007

Biology Section
Bureau of Laboratories
Division of Resource Assessment and Management

Quality Manual No. 870346G
NELAC Certification No. E31780

City of Waldo WWTF, East North Street, Waldo, Alachua County, Florida 32694, NPDES #FL0042242. Effluent samples for this facility were collected on May 14, 2007.

Introduction

The City of Waldo WWTF uses the extended-aeration treatment process to treat domestic wastewater to advanced treatment standards. The facility has a design flow of 0.099 million gallons per day (MGD) annual average daily flow (AADF). The AADF from May 1, 2006, through April 30, 2007, was 0.093 MGD. The treatment facility consists of an influent bar screen, a grit removal chamber, a flow-equalization and pumping tank, three aeration basins, a clarifier, a chlorine contact chamber, a supplemental chlorine contact chamber, a post-aeration tank, a sodium bisulfite feed system, a ferric chloride feed system, and an aerobic sludge holding tank. Treated effluent is discharged to three constructed wetlands that discharge through a weir (Outfall D-001) to an adjacent wetland, thence to the Class III freshwaters of the Santa Fe River. Outfall D-001 is located approximately at latitude 29º 47' 28" N, longitude 82º 10' 00". Wastewater residuals are transported by Gainesville Regional Utilities (GRU) to the GRU Main Street WWTP for further treatment and disposal.

The facility has no Administrative Orders but is currently operating under Consent Order (CO) OGC Case No. 06-1000. The finding of this order was that the City of Waldo was operating the facility in a manner that is inconsistent with the terms of the permit for total phosphorus, total and unionized ammonia, and total nitrogen. To comply with the CO, the city had to start a reduction plan for infiltration/inflow into the collection system and upgrade the plant to avoid any future violations.

A review of Discharge Monitoring Reports revealed permit violations for carbonaceous biochemical oxygen demand (CBOD; monthly and maximum), total nitrogen (monthly and annual), and total phosphorus (monthly and maximum) in May 2006. Additionally, the annual average for nitrogen was exceeded in June 2006. The facility has no mixing zones or toxicity test requirements. (Facility information provided by Joseph Emery of FDEP Northeast District.)

Methods

Samples for bioassay testing and chemical analyses were collected from the EFA-1 NPDES sampling point (after the chlorine contact chamber but before discharge to the constructed wetlands) for Outfall D-001 by Joseph Emery and Sharon Piltz (FDEP Northeast District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling. Additional samples for chemical analyses were collected from the WIM-1 NPDES sampling point (effluent from constructed wetlands before discharge to receiving wetlands). All DEP SOPs are available on the web at: http://www.floridadep.org/labs/qa/sops.htm.

See Appendix A for the completed chain of custody form.

The 48-hour screening toxicity tests and algal growth potential test were performed following internal DEP SOPs TA07_01, TA07_02, and TA08_01 through TA08_09. All internal DEP SOPs are available on the web at: http://www.floridadep.org/labs/cgi-bin/sop/biosop.asp. The Department uses the 48-hour acute screening toxicity test to provide reasonable assurance that the facility does not adversely affect waters of the state.

Total residual chlorine was detected at 1.58 mg/L in the bioassay sample in the laboratory. An aliquot of this sample was dechlorinated by the addition of sodium thiosulfate (0.025 N) at a rate of 1.7 mL per liter of sample to neutralize the chlorine. Bioassays were performed on the dechlorinated aliquot in addition to the bioassays performed on the original sample. The same concentration of sodium thiosulfate was added to the dechlorinated test controls. The purpose of the dechlorinated test controls was to confirm that there was no adverse effect of adding sodium thiosulfate to the sample. There was no mortality in the dechlorinated controls of either test species.

Toxicity Test Results

Tests were performed May 15 - 17, 2007.

Ceriodaphnia dubia 48-hour acute screening bioassay –	LC_{50} < 100%, 100% mortality * in 100% sample within 1 hour of test initiation
Ceriodaphnia dubia 48-hour acute screening bioassay – **Dechlorinated**	LC_{50} > 100%, 0% mortality * in 100% sample at 48 hours
Cyprinella leedsi 48-hour acute screening bioassay –	LC_{50} < 100%, 100% mortality * in 100% sample within 30 minutes of test initiation
Cyprinella leedsi 48-hour acute screening bioassay – **Dechlorinated**	LC_{50} > 100%, 0% mortality* in 100% sample at 48 hours

The bioassay sample containing total residual chlorine (TRC) was acutely toxic to the test organisms; however, the aliquot of dechlorinated sample was not acutely toxic to the test organisms. The toxicity in this sample was primarily attributed to the TRC concentration in the sample. TRC levels as low as 0.028 mg/L have been found to be acutely toxic to some freshwater fish and invertebrates (EPA *Quality Criteria for Water* 1986, EPA 44015-86-001, 1986).

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

*NOTE: In a 48-hour acute screening test of 100% effluent, mortality of <20% provides reasonable assurance that the effluent meets the acute toxicity criterion of Florida's Surface Water Quality Standards (Rule 62-302.500 (1)(a)4, F.A.C.). Mortality between 20-50% indicates low to moderate levels of toxicity, and further action may be required. Mortality of >50% provides reasonable assurance that the effluent fails to meet the minimum requirement to discharge to waters of the state (Rule 62-4.244(3)(a), F.A.C.).

Algal Growth Potential

The effluent Algal Growth Potential (AGP) in the sample collected from the EFA-1 NPDES sampling point was 83.2 mg dry wt/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. Raschke and Shultz (1987) found that AGP values above 5.0 mg dry weight/L represent a "problem" threshold for fresh receiving waters, implying nutrient enrichment. The analytical chemistry suggests that the effluent is phosphorus-limited. The predicted AGP based on inorganic phosphorus concentrations was 60.2 (±20%) mg dry wt/L (Table 1; Miller et al. 1978).

The effluent Algal Growth Potential (AGP) in the sample collected from the WIM-1 NPDES sampling point was 6.2 mg dry wt/L of *Pseudokirchneriella subcapitata*, which is only slightly greater than the "problem" threshold for fresh receiving waters. The analytical chemistry suggests that the effluent is nitrogen-limited at WIM-1. The predicted AGP based on inorganic nitrogen concentrations was 3.7 (±20%) mg dry wt/L (Table 1; Miller et al. 1978).

See Table 1 for AGP results.

Chemistry Results

Total residual chlorine (TRC) was detected in the bioassay sample in the field (1.82 mg/L) and in the laboratory (1.58 mg/L). These concentrations were in compliance with the permit requirement for TRC (≥ 0.5 mg/L) at the EFA-1 NPDES sampling point. Total ammonia (0.167 mg/L) was detected in the bioassay sample in the laboratory. Based on the pH, salinity, and temperature of the effluent, the

calculated unionized ammonia concentration was less than 0.02 mg/L. The total ammonia concentrations in the samples collected and preserved for chemical analysis were 0.23 mg/L at EFA-1 and 0.091 mg/L at WIM-1. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was less than 0.02 mg/L in both samples.

Effluent dissolved oxygen (0.8 mg/L) at WIM-1 did not comply with the Class III fresh water quality criterion for dissolved oxygen (≥ 5.0 mg/L; 62-302.530(30), F.A.C.).

In the effluent collected from EFA-1, copper, iron, nickel, and zinc were detected at levels that comply with Class III fresh water quality criteria (62-302.530, F.A.C.). Arsenic, cadmium, and lead were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL).

In the effluent collected from WIM-1, iron and nickel were detected at levels that comply with Class III fresh water quality criteria (62-302.530, F.A.C.). Arsenic and copper were detected between the MDL and PQL.

There was a significant reduction in the nitrite/nitrate concentration in the WIM-1 sample (0.006 mg/L) compared to the EFA-1 sample concentration (3.1 mg/L). Conversely, there was a significant increase in the phosphorus concentration in the WIM-1 sample (ortho-phosphate - 0.84 mg/L; total phosphorus - 0.98 mg/L) compared to the EFA-1 sample (ortho-phosphate - 0.14 mg/L, total phosphorus - 0.27 mg/L).

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

Effluent samples were collected from both the EFA-1 and the WIM-1 NPDES sampling points for Outfall D-001 for this facility on May 14, 2007. The EFA-1 sample was acutely toxic to both test species during the 48-hour acute screening bioassays. The toxicity was attributed to the total residual chlorine in the effluent. Additional acute screening bioassays were performed on dechlorinated aliquots of effluent, and these tests did not show toxicity during the 48-hour test period. The EFA-1 and WIM-1 AGP results both exceeded the "problem" threshold for fresh receiving waters; however, the AGP at EFA-1 was 13 times as great as the AGP at WIM-1. There was significant reduction in the nitrite/nitrate concentration in the WIM-1 sample compared to the EFA-1 sample; conversely, there was a significant increase in the phosphorus concentration in the WIM-1 sample compared to the EFA-1 sample. We suggest that additional samples for nutrient analysis be collected from this facility to verify these results. The dissolved oxygen concentration at WIM-1 did not comply with the water quality standard for dissolved oxygen (62-302.530, F.A.C.).

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 nitrogen (TSIN), orthophosphate (OP), total nitrogen (TN) and total phosphorus (TP) limitation of the freshwater species *Pseudokirchneriella subcapitata* and ratios of the nitrogen to phosphorus for samples collected from the City of Waldo Wastewater Treatment Facility on May 14, 2007

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
EFA-1	83.2	126.5 ± 25.3	60.2 ± 12.0	171.0 ± 34.2	116.1 ± 23.2	23.8	16.7
WIM-1	6.2	3.7 ± 0.7	361.2 ± 72.2	64.8 ± 13.0	421.4 ± 84.3	0.1	1.7

Table 2. Effluent limits, Class III Freshwater Criteria, and chemical data for samples collected from the City of Waldo Wastewater Treatment Facility on May 14, 2007.

City of Waldo Wastewater Treatment Facility NPDES #FL0042242	Class III Fresh Stds	Effluent Limits EFA-1	Effluent Limits WIM-1	Effluent EFA-1	Effluent WIM-1
Organic Constituents (µg/L)					
None Detected	-	-	-	-	-
Metals (µg/L unless otherwise noted)					
Aluminum	-	-	-	30 U	30 U
Arsenic	≤ 50	-	-	0.71 I	1.0 I
Cadmium (EFA-1)	≤ 0.42 b	-	-	0.029 I	-
Cadmium (WIM-1)	≤ 0.45 b	-	Report	-	0.02 U
Calcium (mg/L)	-	-	-	43.1	47.2 A
Chromium-III	≤ 140.6 b	-	-	1.0 U	1.0 U
Copper	≤ 15.5 b	-	Report	2.28	0.34 I
Iron	≤ 1,000	-	Report	222	157 A
Lead	≤ 6.8 b	-	Report	0.23 I	0.2 U
Magnesium (mg/L)	-	-	-	18	20 A
Mercury	≤ 0.012	-	Report	0.12 U	0.12 U
Nickel	≤ 86.5 b	-	Report	5.01	3.71 A
Selenium	≤ 5.0	-	-	0.5 U	0.5 U
Silver	≤ 0.07	-	Report	0.025 U	0.025 U
Zinc	≤ 198.8 b	-	Report	40	5.0 U
Nutrients (mg/L)					
Ortho-phosphate	-	-	Report	0.14	0.84
Total Phosphorus	-	Report	≤ 2.0 s	0.27	0.98
Total Ammonia	-	-	≤ 3.2 s	0.23	0.091
Un-ionized Ammonia	≤ 0.02	-	-	≤ 0.02 c	≤ 0.02 c
Nitrate and Nitrite	-	-	Report	3.1 f	0.006 I
Total Kjeldahl Nitrogen	-	-	Report	1.4	1.7
Organic Nitrogen	-	-	-	1.17 c	1.609 c
Total Nitrogen	-	Report	≤ 6.0 s	4.5 c	1.706 c
General Physical and Chemical Parameters					
Dissolved Oxygen (mg/L)	≥ 5.0	-	Report	6.6	0.8
pH (SU)	6.0 - 8.5	6.0 - 8.5	Report	7.3	6.9
Conductivity (µmhos/cm)	≤ 1,275	-	Report	759	821
Temperature °C	-	-	Report	24.6	21.2
Sample Depth	-	-	-	0.25	0.07
Stage	-	-	Report	-	-
Total Residual Chlorine (mg/L)	≤ 0.01	≥ 0.5	≤ 0.01 s	1.82	0.02 U
Chlorophyll a (µg/L)	-	-	Report	0.85 U	1.7 I
Phaeophytin (µg/L)	-	-	-	1.5 U	1.5 U
Total Suspended Solids (mg/L)	-	≤ 60 s	≤ 10 s	4.0 U	4.0 I
Turbidity (NTU)	≤ 29t	-	-	-	-
Color (pt-Co)	-	-	Report	15	80
CBOD, 5 day (mg/L), N - inhibited	-	≤ 60 s	≤ 10 s	5.8 A	-
Sulfate (mg/L)	-	-	Report	19	54
Flow (MGD)	-	≤ 0.099 a	-	0.093 a	-
Hardness (mg $CaCO_3$)	-	-	-	181.74 c	200.22 c
Microbiology (Number of counts/100ml)					
Fecal Coliforms	≤ 800 s	≤ 800 s	Report	2.0 U	-

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
f - Analyte was detected in 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

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Request Number: RQ-2007-05-14-31
Waldo WWTF

Event ID *

Requester: Shannan Bogdanov
Field Report Prepared By: Joe Emery
Collected By: Joe Emery / Sharon Piltz
Send Final Report To: Melissa Long
Sampling Agency: NED DEP

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

Lab ID *	Location: Waldo effluent Before Const. Wet land	☐ Comp ☑ Grab	Collection (begin) Date 5/14/07 Time 949	Eastern Central	Collection (end) Date Time	Eastern Central	Bottle Group(s)**		
	Field ID		Tot Res Chlorine (mg/L) 1.82	Diss Oxygen (mg/L) 6.61	Storet Station Number		A		
	Matrix (Include type e.g. Salt, Fresh, etc): Fresh	Temp (C) 24.58	pH 7.31	Sample Depth 0.25 ☑ m ☐ ft	759	☐ Salinity (PPTh) ☑ Sp Conductance (umho/cm)	NPDES Number		
	Latitude o ' "	Longitude o ' "	Comments						
Lab ID *	Location: Waldo Blanks	☐ Comp ☑ Grab	Collection (begin) Date 5/14/07 Time 1005	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		C		
	Matrix (Include type e.g. Salt, Fresh, etc): DI	Temp (C)	pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number		
	Latitude o ' "	Longitude o ' "	Comments						
Lab ID *	Location: Waldo effluent to Rec. Wetland	☐ Comp ☑ Grab	Collection (begin) Date 5/14/07 Time 1015	Eastern Central	Collection (end) Date Time	Eastern Central	Bottle Group(s)**		
	Field ID		Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L) 8.78	Storet Station Number		B		
	Matrix (Include type e.g. Salt, Fresh, etc): Fresh	Temp (C) 21.24	pH 6.89	Sample Depth 0.07 ☑ m ☐ ft	821	☐ Salinity (PPTh) ☑ Sp Conductance (umho/cm)	NPDES Number		
	Latitude o ' "	Longitude o ' "	Comments						
Lab ID *	Location	☐ Comp ☐ Grab	Collection (begin) Date Time	Eastern Central	Collection (end) Date Time	Eastern Central	Bottle Group(s)**		
	Field ID		Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number				
	Matrix (Include type e.g. Salt, Fresh, etc):	Temp (C)	pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number		
	Latitude o ' "	Longitude o ' "	Comments: 2 bioassay jars Tamara Daniels 1000 5.15.07						

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
	5/14/07 1400	DHL						5-15-07 9:30

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

FDEP Biology Laboratory - Acute Screen Bioassay Bench Sheets

Facility: Waldo WWTF, City of

Address: East North Street

City: Waldo County: Alachua

Contact/District: Joseph Emery / Northeast

NPDES Permit #: FL 0042242

LIMS Job #: TLH-2007-05-15-38-01 LIMS Sample #: 1009213

Lims Data Entry: 5-18-07 MF Data Entry Verification: 5.18.07 JD

Sample Collection: Date: 5/14/07 Time: 0949

Hold Time Start: Date: 5/14/07 Time: 0949

Comments:
100% mortality in Cyprinodon variegatus 100% Sample concentration within 30 mins of organism loading. J.D. 5.15.07
100% mortality in Ceriodaphnia dubia 100% sample test concentration within 1 hour of loading MF.
aliquot of sample dechlorinated by the addition of 1.7 mL of 0.025N sodium thiosulfate per liter of sample. Dechlorinated controls prepared by adding 1.7 ml/L Sodium thiosulfate to the appropriate control waters. MF 5-15-07
LC50 > 100% in Dechlorinated tests at 48-hours MF 5-17-07

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

Test Type: Screen
(Static) / Static Renewal / Flow-through

Test Duration: (48) 96 Hours.

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

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

Initial sample handling:

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

Aeration : yes (no) Initial DO: ____mg/L Final DO: ____mg/L Duration: ____minutes Rate: ~ ____bubbles/min

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

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

Dechlorination: (yes) no ~~3.4~~ 1.7 mL of 0.025N Sodium Thiosulfate per liter of sample. Final TRC: 0.05 mg/L

Sample Validation:

Temperature: Shipped ≤6°C (Yes) No Hand Delivered: Cooling (received °C < collected °C) Yes No

Holding Time: ≤36 Hours (Yes) No (Composite-end of collection; grab-when collected; 4 in 24 - time last sample collected)

Light Intensity : 50 - 100 ft. candles

Photoperiod : 16 light 8 dark

Temperature Range °C:

Incubator # 2 min 25.4 max 26.1 mean 26.0

Incubator # ____ min ____ max ____ mean ____

Room B246 min 25.4 max 26.5 mean ~~25.9~~ 24.9 (25)

Investigators' Signatures

James Beach

Paul McCaila

Marshall Fairbanks

Nicole Wellendorf

REVIEWER

Water Quality Parameters	20% DMW	Moderately Hard Water/ (Well Water)	Salt Water ASW NSW Test 1	Salt Water ASW NSW Test 2	Other: Dechlorinated Sample	Original Sample	Method	Measured by	Verified by
Field Total Residual Cl_2 (mg/L):	N/A	N/A	N/A	N/A	—	1.82	hach	JEmery	MF
Lab Total Residual Cl_2 (mg/L):	<0.03	<0.03			0.05	1.56	HACH	~~PPV~~	MF
Alkalinity (mg/L as $CaCO_3$):	83	143			—	164	HACH	~~PPV~~	MF
Hardness (mg/L as $CaCO_3$):	92	144			—	200	HACH	~~PPV~~	MF
Total Ammonia (mg/L as N):	<0.017	<0.017			—	0.167	DENVER	MF	JD
Salinity (ppth):	<1	<1			—	<1	YSI (Mettler)	MF	JD

V 1.4 9/12/05

Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1009213 Test #: 1/2 SOP#:TA 07 01 Test Started: Date 5-14-07 15 MF Time: 1215
Organism/Batch/Age: C.dubia / 19-07 / <24 HR. Test Ended: Date 5-14-07 17 MF Time: 1220
Chamber/Test Volume: 30 / 20 ml Diluent/ Batch: DHW 20% / 5-14-07
Food/Batch: YCT/-07 P.sub/-07 Artemia 0hr — 24hr — 48hr — 72hr — Artemia Lot# —
Feeding: (Prior to Test) Prior to Renewal Daily

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Ctrl	A	A	5	—	—			
	B	B	5	—	—			
	C	C	5	—	—			
	D	D	5	—	—			
100%	A	A	5	—	—			
	B	B	5	—	—			
	C	C	5	—	—			
	D	D	5	—	—			
dechlor Ctrl	A	A	5	5	5			
	B	B	5	5	5			
	C	C	5	5	5			
	D	D	5	5	5			
dechlor 100%	A	A	5	5	5			
	B	B	5	5	5			
	C	C	5	5	5			
	D	D	5	5	5			
100%	A	A	~~5~~					
	B	B	5	Duplicated #'s MF				
	C	C	5					
	D	D	5	"				
			JD	MF	MF			

Loaded/Verified by: MF/ JD Checked by:
m = missing d = dead BR/AR = Before/After Renewal
Test Results:
Screening Tests: Report LC50 as >100%, =100%, or <100%.
% mortality in 100% sample: 100% LC50: <100%
If Calculated: 95% CI_____ Method_____
Substitue highest test concentration used if other than 100% (example: Ocean outfall tested at 30% concentration).

Comments: all organisms dead in 100% sample w/ in 1 hour of loading. Test terminated at 48 hrs. MF 5-15-07

Dechlorinated Sample LC50 = >100% 0% Mortality at 48-hours MF 5-17-07

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JD

000907

Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1009213 Test #: 2/2 SOP#:TA 07 02 Test Started: Date 5.15.07 Time: 11:30
Organism/Batch/Age: C.dubia / 5-15-07 / 13 DAYS Test Ended: Date 5.17.07 Time: 1255
Chamber/Test Volume: 1000 / 500 ml Diluent/ Batch: WELL / 5-14-07
Food/Batch: YCT — P.sub — Artemia 0hr 6.7.07 24hr ____ 48hr ____ 72hr ____ Artemia Lot# ESC-536-9D
Feeding: (Prior to Test) Prior to Renewal Daily

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
ctrl	A	B9	5	—	—			
	B	B10	5	—	—			
	C	B11	5	—	—			
	D	B12	5	—	—			
100%	A	B13	5	—	—			
	B	B14	5	—	—			
	C	B15	5	—	—			
	D	B16	5	—	—			
dechlor ctrl	A	B17	5	5	5			
	B	B18	5	5	5			
	C	B19	5	5	5			
	D	B20	5	5	5			
dechlor 100%	A	B21	5	5	5			
	B	B22	5	5	5			
	C	B23	5	5	5			
	D	B24	5	5	5			
			JD	JD	JD			

Loaded/Verified by: JD / MF Checked by:
m = missing d = dead BR/AR = Before/After Renewal
Test Results:
Screening Tests: Report LC50 as >100%, =100%, or <100%.
% mortality in 100% sample: 100% LC50: < 100%
If Calculated: 95% CI _____ Method _____
Substitue highest test concentration used if other than 100% (example: Ocean outfall tested at 30% concentration).

Comments: 100% mortality in the 100% sample within 30 minutes of loading. MF 5/17/07
Dechlor'd water sample LC50 > 100% 0% mortality at 48 hours. MF 5/17/07

PAGE V 2.1 11/01/2005

000008

FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 1009213 Test #: 1 of 2

TEST SOP #: TA07_01 Test Species: (*Ceriodaphnia dubia*) *Cyprinella leedsi* *Pimephales promelas* *Americamysis bahia* *Menidia beryllina* Other:_____

Concentration ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		A			
pH (S.U.)	8.2					
Temperature °C	25.0					
Dissolved Oxygen mg/L	7.7					
Conductivity (µmhos) mmhos	174		196			
(initials) Measured by:	MF		MF			
(initials) Recorded by:	MF		MF			

Comments: wrong Control species MF 5/17/07

Test terminated at 0 hour + 1 hour. MF 5/17/07

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M					
pH (S.U.)	7.5					
Temperature °C	25.0					
Dissolved Oxygen mg/L	7.2					
Conductivity (µmhos) mmhos	759					
(initials) Measured by:	MF					
(initials) Recorded by:	MF					

Comments:

Concentration "Dechlorinated" Control	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		A			
pH (S.U.)	8.2		8.3			
Temperature °C	25.2		24.9			
Dissolved Oxygen mg/L	7.8		8.1			
Conductivity (µmhos) mmhos	176		196			
(initials) Measured by:	MF		MF			
(initials) Recorded by:	MF		MF			

Comments:

Concentration Dechlorinated 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		A			
pH (S.U.)	7.5		8.3			
Temperature °C	25.1		24.9			
Dissolved Oxygen mg/L	7.2		8.2			
Conductivity (µmhos) mmhos	766		810			
(initials) Measured by:	MF		MF			
(initials) Recorded by:	MF		MF			

Comments:

000009

V 2.0 2/24/04

Page

FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 1009213 **Test #:** 2 of 2

TEST SOP #: TA07_02_ **Test Species:** *Ceriodaphnia dubia* (*Cyprinella leedsi*) *Pimephales promelas* *Americamysis bahia* *Menidia beryllina* Other:_____

Concentration Ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	7.8	8.2	8.4			
Temperature °C	24.1	24.9	25.0			
Dissolved Oxygen mg/L	7.7	7.2	7.6			
Conductivity (mmhos) mmhos	274	298	287			
(initials) Measured by:	JD	JD	JD			
(initials) Recorded by:	JD	JD	JD			

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	7.4	8.1	8.3			
Temperature °C	24.3	24.7	24.6			
Dissolved Oxygen mg/L	7.8	7.2	8.0			
Conductivity (mmhos) mmhos	755	772	786			
(initials) Measured by:	JD	JD	JD			
(initials) Recorded by:	JD	JD	JD			

Comments:

Results from 24 & 48 hr Dechlor Ctrl/100% were mistakenly recorded in 24/48 hr Ctrl & 100%. corrections made 5.17.07 J.D.
C. leedsi original sample test terminated at 0 hr + 30 minutes due to 100% mortality by this 100% sample test concentration 5.21.07

Concentration Dechlor ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	7.8	8.2	8.4			
Temperature °C	24.7	24.9	25.0			
Dissolved Oxygen mg/L	7.7	7.2	7.6			
Conductivity (mmhos) mmhos	304	288	287			
(initials) Measured by:	JD	JD	JD			
(initials) Recorded by:	JD	JD	JD			

Comments:

Concentration Dechlorinated 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	7.5	8.1	8.3			
Temperature °C	24.5	24.7	24.6			
Dissolved Oxygen mg/L	7.8	7.2	8.0			
Conductivity (mmhos) mmhos	762	772	786			
(initials) Measured by:	JD	JD	JD			
(initials) Recorded by:	JD	JD	JD			

Comments:

Appendix C. SRT Bench Sheets and Statistical Analysis

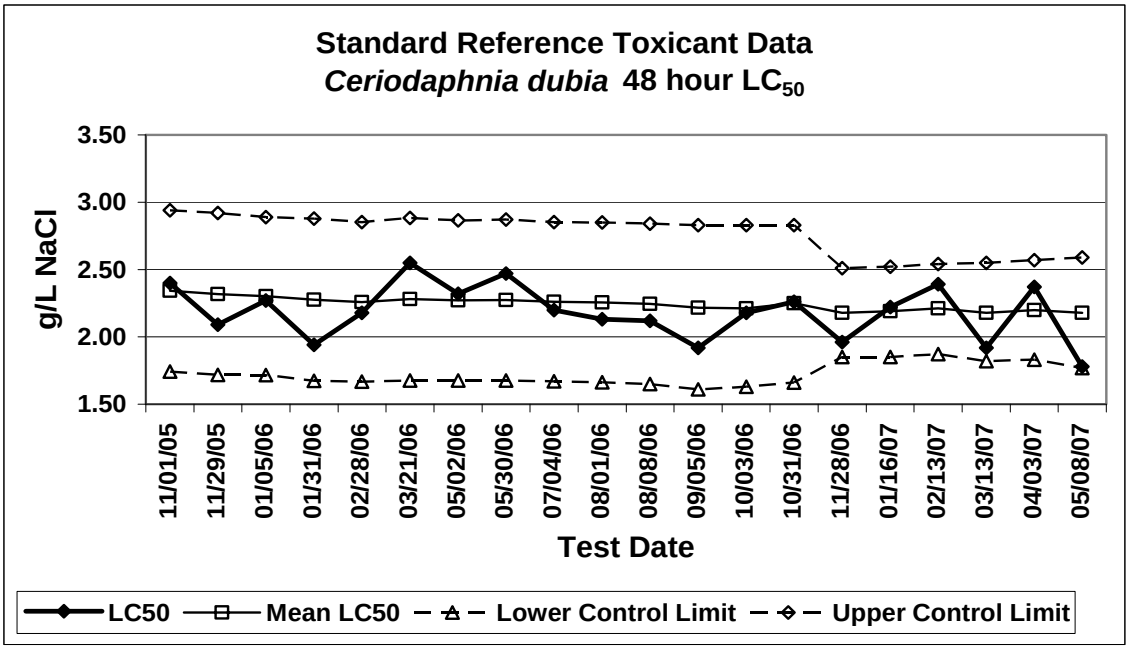
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 48-hour Acute Toxicity
Ceriodaphnia dubia (water flea) - Sodium Chloride (NaCl)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
11/01/05	2.40	2.34	0.30	1.74	2.94
11/29/05	2.09	2.32	0.30	1.72	2.92
01/05/06	2.27	2.30	0.29	1.72	2.89
01/31/06	1.94	2.28	0.30	1.67	2.88
02/28/06	2.18	2.26	0.30	1.67	2.85
03/21/06	2.55	2.28	0.30	1.68	2.88
05/02/06	2.32	2.27	0.30	1.68	2.87
05/30/06	2.47	2.27	0.30	1.68	2.87
07/04/06	2.20	2.26	0.30	1.67	2.85
08/01/06	2.13	2.26	0.30	1.66	2.85
08/08/06	2.12	2.24	0.30	1.65	2.84
09/05/06	1.92	2.22	0.30	1.61	2.83
10/03/06	2.18	2.21	0.30	1.63	2.83
10/31/06	2.26	2.25	0.29	1.66	2.83
11/28/06	1.96	2.18	0.17	1.85	2.51
01/16/07	2.22	2.19	0.17	1.85	2.52
02/13/07	2.39	2.21	0.17	1.87	2.54
03/13/07	1.92	2.18	0.18	1.82	2.55
04/03/07	2.37	2.20	0.18	1.83	2.57
05/08/07	1.78	2.18	0.21	1.77	2.59

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

CV = 9.63
EPA reference 75th quartile CV = 29%



Appendix C. (continued)

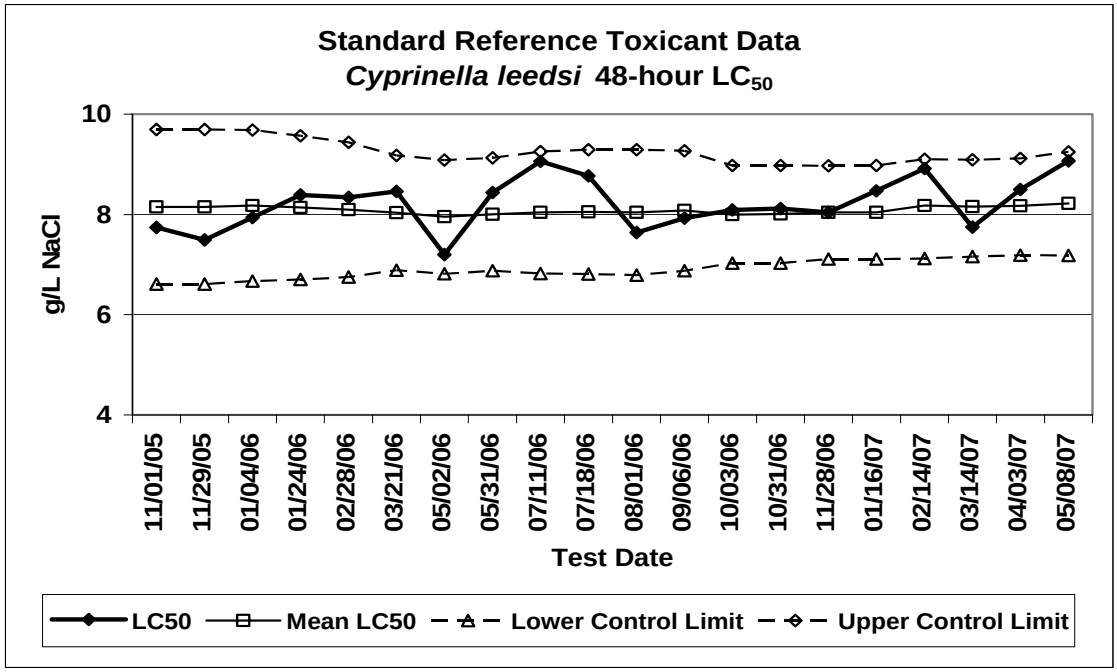
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 48-hour Acute Toxicity
Cyprinella leedsi (bannerfin shiner) - Sodium Chloride (NaCl)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
11/01/05	7.74	8.15	0.77	6.61	9.69
11/29/05	7.49	8.15	0.77	6.61	9.69
01/04/06	7.94	8.18	0.75	6.67	9.68
01/24/06	8.39	8.14	0.72	6.71	9.57
02/28/06	8.34	8.09	0.67	6.75	9.44
03/21/06	8.46	8.04	0.57	6.89	9.18
05/02/06	7.2	7.95	0.57	6.82	9.09
05/31/06	8.44	8.00	0.56	6.88	9.13
07/11/06	9.06	8.04	0.61	6.82	9.26
07/18/06	8.77	8.05	0.62	6.81	9.29
08/01/06	7.64	8.04	0.63	6.79	9.29
09/06/06	7.93	8.08	0.60	6.88	9.27
10/03/06	8.09	8.00	0.49	7.03	8.98
10/31/06	8.12	8.01	0.49	7.03	8.98
11/28/06	8.04	8.04	0.46	7.11	8.97
01/16/07	8.47	8.04	0.48	7.11	8.98
02/14/07	8.92	8.18	0.50	7.12	9.10
03/14/07	7.75	8.16	0.50	7.16	9.09
04/03/07	8.50	8.17	0.49	7.19	9.12
05/08/07	9.07	8.22	0.52	7.18	9.25

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

CV = 6.33
EPA reference 75th quartile CV = 19%



Appendix C. (continued)

FDEP Biology Laboratory - Acute SRT Bench Sheet

Test Organism: *Americamysis bahia* (Method 2007.0) *Menidia beryllina* (Method 2006.0) *Hyalella azteca* (Method 100.1 EPA-600-R-99-064) *Ceriodaphnia dubia* (Method 2002.0) *Cyprinella leedsi* (Method 2000.0) *Pimephales promelas* (Method 2000.0) Other: _____

Method from EPA-821-R-02-012
Test Type: 48 hour non-renewal / 96 hour renewal
Test Page 1 of 2

Diluent/ Batch #: DMW 1.4-30-07
Toxicant/ Batch#: NaCl 1.5-8-07

Test Beginning: Date: 5-8-07 Time: 13:40
Test Ending: Date: 5-12-07 Time: 1030

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	PPV
Alkalinity (mg/L as $CaCO_3$):	89	Hach	PPV
Hardness (mg.L as $CaCO_3$):	95	Hach	PPV
Total Ammonia (mg/L as N):	<0.017	Denver	PPV
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 15-07 / <24HR
Feeding: Prior to test / Prior to renewal / Daily
Food: YCT / R.subcapitata Artemia: Lot # —
Food Batch: 2-7-07 1-7-07 0hr — 24hr — 48hr — 72hr —
Chamber size: 30 mL
Test volume: 20 mL per replicate

Conc. µg/L (ng/L)	Rep.	Chamber #	Number Live 0 hr (48 hr)	Number Live 24 hr (72 hr)	Number Live 48 hr (96 hr)	pH (SU) 0 hr (48 hr)	pH (SU) 24 hr (72 hr)	pH (SU) 48 hr (96 hr)	Temperature (°C) 0 hr (48 hr)	Temperature (°C) 24 hr (72 hr)	Temperature (°C) 48 hr (96 hr)	D.O. (mg/L) 0 hr (48 hr)	D.O. (mg/L) 24 hr (72 hr)	D.O. (mg/L) 48 hr (96 hr)	Uncorrected Conductivity µmhom/cm (mmhos/cm) 0 hr (48 hr)	Uncorrected Conductivity 24 hr (72 hr)	Uncorrected Conductivity 48 hr (96 hr)
Control	A	A	A5	5	5	8.2		8.1	24.4		24.7	7.7		7.5	0.175		0.185
	B	B	B5	5	5												
	C	C	C5	5	5												
	D	D	D5	5	5												
1.5g/L	A	A	A5	5	4 1D	8.1		8.1	24.6		24.6	7.4		7.5	2.93		3.23
	B	B	B5	5	3 2D												
	C	C	C5	4 1D	5												
	D	D	D5	5	5												
2.0	A	A	A5	5	1 4D	8.1		8.1	24.8		24.3	7.3		7.5	3.86		4.12
	B	B	B5	5	1 4D												
	C	C	C5	4 1D	2 2D												
	D	D	D5	4 1D	1 3D												
2.5	A	A	A5	3 2D	1 2D	8.1		8.1	24.8		24.2	7.3		7.6	4.74		5.05
	B	B	B5	5	0 5D												
	C	C	C5	5	0 5D												
	D	D	D5	3 2D	0 3D												
3.0	A	A	A5	0 5D	—	8.0		—	24.8		—	7.4		—	5.54		5.98 MF
	B	B	B5	1 4D	0 1D			8.1			24.0			7.5			5.98
	C	C	C5	1 4D	0 1D												
	D	D	D5	1 4D	0 1D												
4.0	A	A	5	1 4D	0 1D	8.1		8.1	24.7		23.9	7.4		7.3	7.28		7.73
	B	B	5	0 5D													
	C	C	5	0 5D													
	D	D	5	0 5D													
	A		Chamber ID written in														
	B		Survival Column in error														
	C			MF for BA 5/21/07													
	D																
Loaded / measured by:			BA	BA	MF	BA		MF	BA		MF	BA		MF	BA		MF
Recorded by:			BA	BA	MF	BA		MF	BA		MF	BA		MF	BA		MF

Investigators' Signatures
Tonia Daniels
Patty Vichaikul
Brent Bissett
Marshall Faircloth
Nicole Wellendorf
REVIEWER

Concentrations prepared by: BA
Loading verified by: PPV
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min 25.5 max 25.9 mean 25.7
Incubator # ___ min ___ max ___ mean ___
Room B246 min 24.6 max 26.1 mean 25.2

Comments:

Statistics: Method: Spearman-Karber
(48) 96 hour LC_{50}: 1.78
95% Confidence Interval: lower 1.60 upper 1.91

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Appendix C. (continued)

FDEP Biology Laboratory - Acute SRT Bench Sheet

Test Organism: *Americamysis bahia* Method 2007.0 | *Menidia beryllina* Method 2006.0 | *Hyalella azteca* Method 100.1 EPA-600-R-99-064
Ceriodaphnia dubia ~~Method 2002.0~~ | *Cyprinella leedsi* Method 2000.0 | *Pimephales promelas* Method 2000.0 | Other: _____

Method from EPA-821-R-02-012
Test Type: 48 hour non-renewal / 96 hour renewal
Test Page 2 of 2

Diluent/ Batch #: DmW 14-30-07
Toxicant/ Batch#: NaCl 15-807

Test Beginning: Date: 5/8/07 Time: 1340
Test Ending: Date: 5-12-07 Time: 1030

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	40.03	Hach	~~PPV~~
Alkalinity (mg/L as $CaCO_3$):	89	Hach	~~PPV~~
Hardness (mg.L as $CaCO_3$):	95	Hach	~~PPV~~
Total Ammonia (mg/L as N):	40.07	Denver	~~PPV~~
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 18-07 / < 24 HR.
Feeding: Prior to test / Prior to renewal / Daily
Food: YCT / *P.subcapitata* Artemia: Lot # —
Food Batch: 2-7-07 1-7-07 0hr — 24hr — 48hr — 72hr —
Chamber size: 30 mL
Test volume: 20 mL per replicate

48hr is → After Renewal at 48 hours MF 5-10-07

Conc. µg/L / mg/L	Rep.	Chamber #	Number Live 0 hr	Number Live 24 hr	Number Live 48 hr	pH (SU) 0 hr	pH (SU) 24 hr	pH (SU) 48 hr	Temperature (°C) 0 hr	Temperature (°C) 24 hr	Temperature (°C) 48 hr	D.O. (mg/L) 0 hr	D.O. (mg/L) 24 hr	D.O. (mg/L) 48 hr	Uncorrected Conductivity µmhom/cm / mmhos/cm 0 hr	Uncorrected Conductivity 24 hr	Uncorrected Conductivity 48 hr
			48 hr	72 hr	96 hr	48 hr	72 hr	96 hr	48 hr	72 hr	96 hr	48 hr	72 hr	96 hr	48 hr	72 hr	96 hr
Control	A	A	5	5	5	8.3	—	8.1	24.3	—	24.4	7.8	—		0.180	—	0.182
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	5												
1.5	A	A	4	4	4	8.1	—	7.7	24.6	—	24.1	7.5	—		2.90	—	3.11
	B	B	3	2 1D	2												
	C	C	5	4 1D	4												
	D	D	5	5	5												
2.0	A	A	1	0 1D		8.1	8.1		24.6	25.3		7.5	7.5		3.85	3.91	
	B	B	1	0 1D													
	C	C	2	0 2D													
	D	D	1	0 1D													
2.5	A	A	1	0 1D		8.1	8.1		24.5	25.0		7.6	7.7		4.62	4.68	
	B	B	—														
	C	C	—														
	D	D	—														
3.0	A	A															
	B	B															
	C	C															
	D	D															
4.0	A	A															
	B	B															
	C	C															
	D	D															
	A																
	B																
	C																
	D																
Loaded / measured by:			MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF
Recorded by:			MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF

Investigators' Signatures
James Daniels
~~Basil V. Crain~~
Bruce Rountree
Marshall Faircloth
Nigel Wellendorf
REVIEWER

Concentrations prepared by: BA
Loading verified by: ✓
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min. 25.5 max. 25.8 mean 25.7
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min. 24.0 max. 26.1 mean 25.3

Comments:
PROGRAM SAID CONFIDENCE LEVELS ARE NOT RELIABLE. ~~PPV~~ 5/14/07

Statistics: Method: Spearman-Karber
48 (96) hour LC_{50}: 1.65
95% Confidence Interval: lower — upper —

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Appendix C. (continued)

FDEP Biology Laboratory - Acute SRT Bench Sheet

Test Organism: *Americamysis bahia* Method 2007.0 | *Menidia beryllina* Method 2006.0 | *Hyalella azteca* Method 100.1 EPA-600-R-99-064
Ceriodaphnia dubia Method 2002.0 | *Cyprinella leedsi* ~~Method 2000.0~~ | *Pimephales promelas* Method 2000.0 | Other: _____

Method from EPA-821-R-02-012
Test Type: 48 hour non-renewal ~~96 hour renewal~~
Test Page 1 of 2

Diluent/ Batch #: Well 1 5.7.07
Toxicant/ Batch#: NaCl 1 5.7.07

Test Beginning: Date: 5.8.07 Time: 1235
Test Ending: Date: 5-12-07 Time: 0950

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	PPV
Alkalinity (mg/L as $CaCO_3$):	136	Hach	BA
Hardness (mg.L as $CaCO_3$):	138	Hach	BA
Total Ammonia (mg/L as N):	<0.07	Denver	PPV
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 5-8-07/13 DAYS
Feeding: ~~Prior to test?~~ ~~Prior to renewal?~~ Daily
Food: YCT P.subcapitata Artemia: Lot # ESL-S36 90
Food Batch: _____ _____ 0hr 5-8-07 24hr ____ 48hr 5-10-07 72hr ____
Chamber size: 1000 mL
Test volume: 500 mL per replicate

Conc. µg/L ~~mg/L~~	Rep.	Chamber #	Number Live 0 hr ~~48 hr~~	Number Live 24 hr ~~72 hr~~	Number Live 48 hr ~~96 hr~~	pH (SU) 0 hr ~~48 hr~~	pH (SU) 24 hr ~~72 hr~~	pH (SU) 48 hr ~~96 hr~~	Temperature (°C) 0 hr ~~48 hr~~	Temperature (°C) 24 hr ~~72 hr~~	Temperature (°C) 48 hr ~~96 hr~~	D.O. (mg/L) 0 hr ~~48 hr~~	D.O. (mg/L) 24 hr ~~72 hr~~	D.O. (mg/L) 48 hr ~~96 hr~~	Uncorrected Conductivity µmhom/cm (mmhos/cm) 0 hr ~~48 hr~~	Uncorrected Conductivity 24 hr ~~72 hr~~	Uncorrected Conductivity 48 hr ~~96 hr~~
Control	A	E13	10	10	10	7.8		8.3	24.0		25.0	7.0		7.2	0.273		0.294
	B	E14	10	10	10		8.2			24.6			7.1			0.327	
	C																
	D																
6 g/L	A	E15	10	10	10	7.7		8.1	24.4		25.0	6.7		6.7	10.4		10.1
	B	E16	10	10	10		8.1			24.5			6.7			10.2	
	C																
	D																
7 g/L	A	E17	10	10	10	7.7		8.1	24.6		24.5	6.8		6.8	12.0		11.5
	B	E18	10	10	9 10		8.0			24.1			6.7			11.9	
	C																
	D																
8 g/L	A	E19	10	9 10	9	7.7		8.3	24.6		24.8	6.9		6.9	13.7		13.6
	B	E20	10	8 20	8		8.1			24.4			6.8			13.6	
	C																
	D																
9 g/L	A	E21	10	8 20	7 10	7.7		8.1	24.7		24.9	6.9		7.0	15.0		14.6
	B	E22	10	7 30	7		8.0			24.5			6.7			14.7	
	C																
	D																
10 g/L	A	E23	10	1 30	0 10	7.7		8.2	24.8		24.9	7.0		6.9	17.1		16.8
	B	E24	10	2 30	1 10		8.0			24.5			6.5			16.8	
	C																
	D																
	A																
	B																
	C																
	D																
Loaded / measured by:			JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD
Recorded by:			JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD	JD

Investigators' Signatures
Jason Daniels
Paula Vicenaluz
Bruce Alexander
Marshall Faircloth
Nicole Wellenhof
REVIEWER

Concentrations prepared by: JD
Loading verified by: BA
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min. 25.5 max. 25.4 mean 25.7
Incubator # ___ min. _____ max. _____ mean _____
Room B246 min. 24.6 max. 26.1 mean 25.3

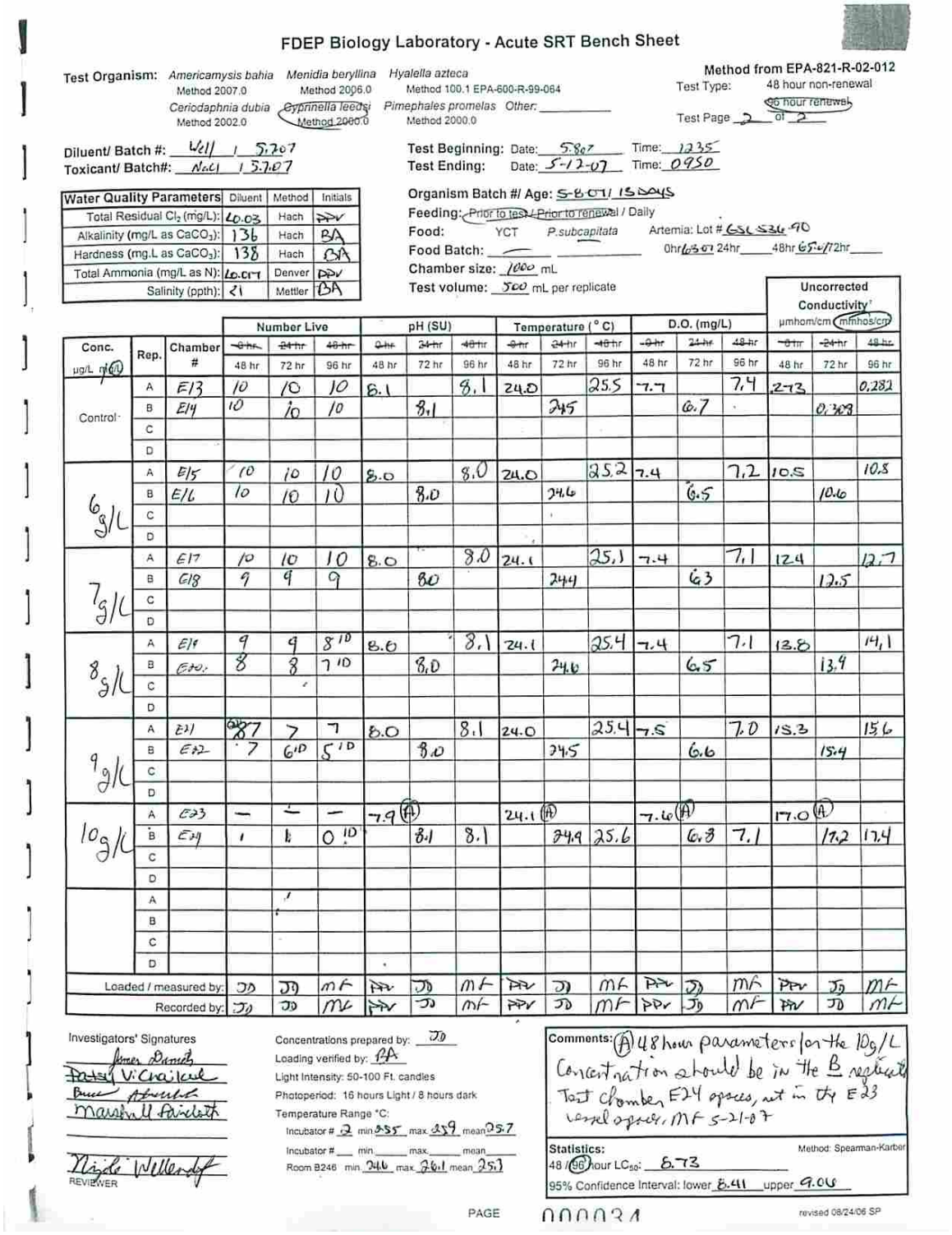
Comments:

Statistics: Method: Spearman-Karber
(48) 96 hour LC_{50}: 9.07
95% Confidence Interval: lower 8.76 upper 9.39

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revised 08/24/06 SP

Appendix C. (continued)



FDEP Biology Laboratory - Acute SRT Bench Sheet

Test Organism: *Americamysis bahia* Method 2007.0; *Menidia beryllina* Method 2006.0; *Hyalella azteca* Method 100.1 EPA-600-R-99-064; *Ceriodaphnia dubia* Method 2002.0; *Cyprinella leedsi* Method 2000.0; *Pimephales promelas* Method 2000.0; Other: _____

Method from EPA-821-R-02-012
Test Type: 48 hour non-renewal (96 hour renewal)
Test Page 2 of 2

Diluent/ Batch #: Well / 5.7.07
Toxicant/ Batch#: NaCl / 5.7.07

Test Beginning: Date: 5.8.07 Time: 1235
Test Ending: Date: 5-12-07 Time: 0950

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	0.03	Hach	PPV
Alkalinity (mg/L as $CaCO_3$):	136	Hach	BA
Hardness (mg.L as $CaCO_3$):	138	Hach	BA
Total Ammonia (mg/L as N):	0.07	Denver	PPV
Salinity (ppth):	21	Mettler	BA

Organism Batch #/ Age: 5-8-07 / 15 DAYS
Feeding: Prior to test / Prior to renewal / Daily
Food: YCT *P.subcapitata* Artemia: Lot # GSL 536 90
Food Batch: _____ _____ 0hr 6.8.07 24hr ____ 48hr 6.5.07 72hr ____
Chamber size: 1000 mL
Test volume: 500 mL per replicate

Conc. µg/L	Rep.	Chamber #	Number Live 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	pH (SU) 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	Temperature (°C) 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	D.O. (mg/L) 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	Uncorrected Conductivity µmhom/cm (mmhos/cm) 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr
Control	A	E13	10	10	10	8.1		8.1	24.0		25.5	7.7		7.4	2.73		0.282
	B	E14	10	10	10		8.1			24.5			6.7			0.309	
	C																
	D																
6 g/L	A	E15	10	10	10	8.0		8.0	24.0		25.2	7.4		7.2	10.5		10.8
	B	E16	10	10	10		8.0			24.6			6.5			10.6	
	C																
	D																
7 g/L	A	E17	10	10	10	8.0		8.0	24.1		25.1	7.4		7.1	12.4		12.7
	B	G18	9	9	9		8.0			24.4			6.3			12.5	
	C																
	D																
8 g/L	A	E19	9	9	8 1D	8.0		8.1	24.1		25.4	7.4		7.1	13.8		14.1
	B	E20	8	8	7 1D		8.0			24.6			6.5			13.9	
	C																
	D																
9 g/L	A	E21	8 7	7	7	8.0		8.1	24.0		25.4	7.5		7.0	15.3		15.6
	B	E22	7	6 1D	5 1D		8.0			24.5			6.6			15.4	
	C																
	D																
10 g/L	A	E23	—	—	—	7.9 (A)			24.1 (A)			7.6 (A)			17.0 (A)		
	B	E24	1	1	0 1D		8.1	8.1		24.9	25.6		6.8	7.1		17.2	17.4
	C																
	D																
	A																
	B																
	C																
	D																
Loaded / measured by:			JD	JD	MF	PPV	JD	MF	PPV	JD	MF	PPV	JD	MF	PPV	JD	MF
Recorded by:			JD	JD	MF	PPV	JD	MF	PPV	JD	MF	PPV	JD	MF	PPV	JD	MF

Investigators' Signatures
James Dimick
Patsy V. Chaikin
Bruce Thomas
Marsha M. Faircloth
Nicole Wellendorf
REVIEWER

Concentrations prepared by: JD
Loading verified by: PA
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min 25.5 max 25.9 mean 25.7
Incubator # ___ min ____ max ____ mean ____
Room B246 min 24.6 max 26.1 mean 25.3

Comments: (A) 48 hour parameters for the 10g/L Concentration should be in the B replicate Test Chamber E24 spaces, not in the E23 vessel spaces. MF 5-21-07

Statistics: Method: Spearman-Karber
48 / (96) hour LC_{50}: 8.73
95% Confidence Interval: lower 8.41 upper 9.06

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revised 08/24/06 SP

Appendix C. (continued)

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

DATE: 05-08-07 DURATION: 48 hr TOXICANT: NaCl
SPECIES: C.dubia

RAW DATA: Concentration (g/l)	Number Exposed	Mortalities
0.00	20	0
1.50	20	3
2.00	20	15
2.50	20	19
3.00	20	20
4.00	20	20

SPEARMAN-KARBER TRIM: 15.00%

SPEARMAN-KARBER ESTIMATES: LC50: 1.78
95% LOWER CONFIDENCE: 1.66
95% UPPER CONFIDENCE: 1.91

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

DATE: 05-08-07 DURATION: 48 hr TOXICANT: NaCl
SPECIES: C.leedsi

RAW DATA: Concentration (g/L)	Number Exposed	Mortalities
0.00	20	0
6.00	20	0
7.00	20	1
8.00	20	3
9.00	20	6
10.00	20	19

SPEARMAN-KARBER TRIM: 5.00%

SPEARMAN-KARBER ESTIMATES: LC50: 9.07
95% LOWER CONFIDENCE: 8.76
95% UPPER CONFIDENCE: 9.39

Appendix D. Test Organism Receipts

MBL Aquaculture
4569 Samuel Street
Sarasota, Florida 34233
TEL: (800) 889-0384
FAX: (941) 922-3874
EMAIL: sales@mblaquaculture.com
WEB: www.MBLAquaculture.com

NELAC Accredited

Organism Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Date: 5/7/07

Shipped to: T-DEP

P.O. No: _____

Species	Quantity	Age	Brood Number	Temperature	Salinity
Mysidopsis bahia	150+	4 Days	MS070503	25°C	20 ppt
Menidia beryllina	150+	12 DAYS	SS070425	25°C	20 ppt
Cyprinella leedsi	250+	12 DAYS	CL070425	25°C	
Pimephales promelas	150+	7 days	FM070430	25°C	

Packed by: JU

Shipped Via: Fed Ex.

Notes: _____

Thank you for your order.

Appendix D. (continued)

MBL Aquaculture
4569 Samuel Street
Sarasota, Florida 34233
TEL: (800) 889-0384
FAX: (941) 922-3874
EMAIL: sales@mblaquaculture.com
WEB: www.MBLAquaculture.com

NELAC Accredited

Organism Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Date: 5/14/07

Shipped to: FL DEP

P.O. No: _____

Species	Quantity	Age	Brood Number	Temperature	Salinity
Mysidopsis bahia					
Menidia beryllina					
Cyprinella leedsi	150	12 DAYS	CL070502	25°C	
Pimephales promelas	350	< 24 HR	FM070514-0730	25°C	

Packed by: J

Shipped Via: FedEx

Notes: _____

Thank you for your order.

Appendix E. Chemical Analyses performed on the effluent from the City of Waldo Wastewater Treatment Facility Outfall EFA-1 (effluent before const. wetland) and WIM-1 (effluent to rec. wetland), sampled on May 14, 2007.

Date Sampled	Field ID	Anaylsis Group	Component	Result	Remark	Units	MDL	PQL
5/14/2007 9:49	EFA-1	AGP/LN	Algal Growth Potential	83.2		mg DryWt/L	0.3	0.9
5/14/2007 9:49	EFA-1	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	5.8	A	mg/L	0.2	2
5/14/2007 9:49	EFA-1	Chlorophyll/Grain Size/BOD	Chlorophyll-A, Monochromatic, Water	0.85	U	ug/L	0.85	2.6
5/14/2007 9:49	EFA-1	Chlorophyll/Grain Size/BOD	Phaeophytin-A, Monochromatic, Water	1.5	U	ug/L	1.5	4.5
5/14/2007 9:49	EFA-1	Metals	Mercury	0.12	U	ug/L	0.12	0.5
5/14/2007 9:49	EFA-1	Metals	Aluminum	30	U	ug/L	30	120
5/14/2007 9:49	EFA-1	Metals	Calcium	43.1		mg/L	0.05	0.2
5/14/2007 9:49	EFA-1	Metals	Iron	222		ug/L	10	40
5/14/2007 9:49	EFA-1	Metals	Magnesium	18		mg/L	0.03	0.12
5/14/2007 9:49	EFA-1	Metals	Arsenic	0.71	I	ug/L	0.5	2
5/14/2007 9:49	EFA-1	Metals	Cadmium	0.029	I	ug/L	0.02	0.08
5/14/2007 9:49	EFA-1	Metals	Chromium	1	U	ug/L	1	4
5/14/2007 9:49	EFA-1	Metals	Copper	2.28		ug/L	0.25	1
5/14/2007 9:49	EFA-1	Metals	Lead	0.23	I	ug/L	0.2	0.8
5/14/2007 9:49	EFA-1	Metals	Nickel	5.01		ug/L	0.25	1
5/14/2007 9:49	EFA-1	Metals	Selenium	0.5	U	ug/L	0.5	2
5/14/2007 9:49	EFA-1	Metals	Silver	0.025	U	ug/L	0.025	0.1
5/14/2007 9:49	EFA-1	Metals	Zinc	40		ug/L	5	20
5/14/2007 9:49	EFA-1	Nutrients	Color	15		PCU	5	5
5/14/2007 9:49	EFA-1	Nutrients	Specific_Conductance	738		umhos/cm	2	8
5/14/2007 9:49	EFA-1	Nutrients	Ammonia-N	0.23		mg N/L	0.01	0.02
5/14/2007 9:49	EFA-1	Nutrients	NO2NO3-N	3.1		mg N/L	0.04	0.1
5/14/2007 9:49	EFA-1	Nutrients	O-Phosphate-P	0.14		mg P/L	0.012	0.03
5/14/2007 9:49	EFA-1	Nutrients	Sulfate	19		mg SO4/L	0.4	1
5/14/2007 9:49	EFA-1	Nutrients	Kjeldahl Nitrogen	1.4		mg N/L	0.08	0.2
5/14/2007 9:49	EFA-1	Nutrients	Total-P	0.27		mg P/L	0.02	0.06
5/14/2007 9:49	EFA-1	Nutrients	TSS	4	U	mg/L	4	16
5/14/2007 9:49	EFA-1	Pesticides	Alachlor	0.58	UJ	ug/L	0.58	2.3
5/14/2007 9:49	EFA-1	Pesticides	Ametryn	0.049	UJ	ug/L	0.049	0.2
5/14/2007 9:49	EFA-1	Pesticides	Atrazine	0.049	U	ug/L	0.049	0.2
5/14/2007 9:49	EFA-1	Pesticides	Azinphos Methyl	0.19	U	ug/L	0.19	0.76
5/14/2007 9:49	EFA-1	Pesticides	Bromacil	0.19	U	ug/L	0.19	0.76
5/14/2007 9:49	EFA-1	Pesticides	Butylate	0.19	UJ	ug/L	0.19	0.76
5/14/2007 9:49	EFA-1	Pesticides	Chlorpyrifos Ethyl	0.049	U	ug/L	0.049	0.2
5/14/2007 9:49	EFA-1	Pesticides	Chlorpyrifos Methyl	0.097	UJ	ug/L	0.097	0.39
5/14/2007 9:49	EFA-1	Pesticides	Diazinon	0.049	U	ug/L	0.049	0.2
5/14/2007 9:49	EFA-1	Pesticides	Ethion	0.049	U	ug/L	0.049	0.2
5/14/2007 9:49	EFA-1	Pesticides	Ethoprop	0.097	U	ug/L	0.097	0.39
5/14/2007 9:49	EFA-1	Pesticides	Fenamiphos	0.19	U	ug/L	0.19	0.76
5/14/2007 9:49	EFA-1	Pesticides	Fonofos	0.097	UJ	ug/L	0.097	0.39

Appendix E. Chemical

Date Sampled	Field ID	Anaylsis Group	Component	Result	Remark	Units	MDL	PQL
5/14/2007 9:49	EFA-1	Pesticides	Hexazinone	0.097	U	ug/L	0.097	0.39
5/14/2007 9:49	EFA-1	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
5/14/2007 9:49	EFA-1	Pesticides	Metalaxyl	0.24	U	ug/L	0.24	0.96
5/14/2007 9:49	EFA-1	Pesticides	Metolachlor	0.49	UJ	ug/L	0.49	2
5/14/2007 9:49	EFA-1	Pesticides	Metribuzin	0.097	UJ	ug/L	0.097	0.39
5/14/2007 9:49	EFA-1	Pesticides	Mevinphos	0.19	U	ug/L	0.19	0.76
5/14/2007 9:49	EFA-1	Pesticides	Naled	0.78	U	ug/L	0.78	3.1
5/14/2007 9:49	EFA-1	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
5/14/2007 9:49	EFA-1	Pesticides	Parathion Ethyl	0.15	UJ	ug/L	0.15	0.6
5/14/2007 9:49	EFA-1	Pesticides	Parathion Methyl	0.097	U	ug/L	0.097	0.39
5/14/2007 9:49	EFA-1	Pesticides	Phorate	0.049	U	ug/L	0.049	0.2
5/14/2007 9:49	EFA-1	Pesticides	Prometryn	0.15	UJ	ug/L	0.15	0.6
5/14/2007 9:49	EFA-1	Pesticides	Simazine	0.049	U	ug/L	0.049	0.2
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	1,2-Dichlorobenzene	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	1,3-Dichlorobenzene	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	1,4-Dichlorobenzene	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	2,4-Dichlorophenol	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	2,4-Dimethylphenol	9.7	U	ug/L	9.7	39
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	2,4-Dinitrophenol	15	U	ug/L	15	58
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	2,4-Dinitrotoluene	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	2,6-Dinitrotoluene	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	2-Chloronaphthalene	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	2-Chlorophenol	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9	U	ug/L	2.9	12
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	2-Nitrophenol	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	3,3'-Dichlorobenzidine	39	UJ	ug/L	39	160
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	4,4'-DDD	1.5	U	ug/L	1.5	5.8
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	4,4'-DDE	1.5	U	ug/L	1.5	5.8
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	4,4'-DDT	1.5	U	ug/L	1.5	5.8
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	U	ug/L	1.9	7.8
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	58
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Acenaphthene	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Acenaphthylene	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Aldrin	1.5	U	ug/L	1.5	5.8
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Anthracene	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Benzidine	97	UJ	ug/L	97	390
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Benzo(a)anthracene	0.97	U	ug/L	0.97	3.9

Appendix E. Chemical

Date Sampled	Field ID	Anaylsis Group	Component	Result	Remark	Units	MDL	PQL
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Benzo(a)pyrene	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Benzo(b)fluoranthene	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Benzo(k)fluoranthene	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9	U	ug/L	2.9	12
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	15	U	ug/L	15	58
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Butyl benzyl phthalate	4.9	U	ug/L	4.9	19
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Chrysene	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Di-n-butyl phthalate	4.9	U	ug/L	4.9	19
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Di-n-octyl phthalate	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Dieldrin	1.5	U	ug/L	1.5	5.8
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Diethyl phthalate	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Dimethyl phthalate	49	U	ug/L	49	190
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Endosulfan I	3.9	U	ug/L	3.9	16
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Endosulfan II	3.9	U	ug/L	3.9	16
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Endosulfan sulfate	1.5	U	ug/L	1.5	5.8
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Endrin	1.5	UJ	ug/L	1.5	5.8
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Endrin aldehyde	3.9	U	ug/L	3.9	16
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Fluoranthene	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Fluorene	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Heptachlor	1.5	U	ug/L	1.5	5.8
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Heptachlor epoxide	1.5	U	ug/L	1.5	5.8
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Hexachlorobenzene	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Hexachlorobutadiene	2.9	U	ug/L	2.9	12
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9	U	ug/L	2.9	12
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Hexachloroethane	2.9	U	ug/L	2.9	12
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Isophorone	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	U	ug/L	1.9	7.8
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	U	ug/L	1.9	7.8
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9	U	ug/L	2.9	12
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Naphthalene	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Nitrobenzene	1.9	U	ug/L	1.9	7.8
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Pentachlorophenol	2.9	U	ug/L	2.9	12
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Phenanthrene	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Phenol	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	Pyrene	0.97	U	ug/L	0.97	3.9
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	alpha-BHC	1.5	U	ug/L	1.5	5.8

Appendix E. Chemical

Date Sampled	Field ID	Anaylsis Group	Component	Result	Remark	Units	MDL	PQL
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	beta-BHC	1.5	U	ug/L	1.5	5.8
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	delta-BHC	1.5	U	ug/L	1.5	5.8
5/14/2007 9:49	EFA-1	Priority Organic Pollutants	gamma-BHC	1.5	U	ug/L	1.5	5.8
5/14/2007 9:49	EFA-1	Field Parameters	Dissolved Oxygen	6.61		mg/L		
5/14/2007 9:49	EFA-1	Field Parameters	Sample Depth	0.25		m		
5/14/2007 9:49	EFA-1	Field Parameters	Specific Conductance	759		umhos/cm		
5/14/2007 9:49	EFA-1	Field Parameters	Temperature	24.58		C		
5/14/2007 9:49	EFA-1	Field Parameters	Total Residual Chlorine	1.82		mg/L		
5/14/2007 9:49	EFA-1	Field Parameters	pH	7.31				
5/14/2007 10:15	WIM-1	AGP/LN	Algal Growth Potential	6.17		mg DryWt/L	0.3	0.9
5/14/2007 10:15	WIM-1	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	7.1		mg/L	0.2	2
5/14/2007 10:15	WIM-1	Chlorophyll/Grain Size/BOD	Chlorophyll-A, Monochromatic, Water	1.7	I	ug/L	0.85	2.6
5/14/2007 10:15	WIM-1	Chlorophyll/Grain Size/BOD	Phaeophytin-A, Monochromatic, Water	1.5	U	ug/L	1.5	4.5
5/14/2007 10:15	WIM-1	Metals	Mercury	0.12	U	ug/L	0.12	0.5
5/14/2007 10:15	WIM-1	Metals	Aluminum	30	U	ug/L	30	120
5/14/2007 10:15	WIM-1	Metals	Calcium	47.2	A	mg/L	0.05	0.2
5/14/2007 10:15	WIM-1	Metals	Iron	157	A	ug/L	10	40
5/14/2007 10:15	WIM-1	Metals	Magnesium	20	A	mg/L	0.03	0.12
5/14/2007 10:15	WIM-1	Metals	Arsenic	1	I	ug/L	0.5	2
5/14/2007 10:15	WIM-1	Metals	Cadmium	0.02	U	ug/L	0.02	0.08
5/14/2007 10:15	WIM-1	Metals	Chromium	1	U	ug/L	1	4
5/14/2007 10:15	WIM-1	Metals	Copper	0.34	I	ug/L	0.25	1
5/14/2007 10:15	WIM-1	Metals	Lead	0.2	U	ug/L	0.2	0.8
5/14/2007 10:15	WIM-1	Metals	Nickel	3.71	A	ug/L	0.25	1
5/14/2007 10:15	WIM-1	Metals	Selenium	0.5	U	ug/L	0.5	2
5/14/2007 10:15	WIM-1	Metals	Silver	0.025	U	ug/L	0.025	0.1
5/14/2007 10:15	WIM-1	Metals	Zinc	5	U	ug/L	5	20
5/14/2007 10:15	WIM-1	Nutrients	Color	80		PCU	10	10
5/14/2007 10:15	WIM-1	Nutrients	Specific_Conductance	795		umhos/cm	2	8
5/14/2007 10:15	WIM-1	Nutrients	Ammonia-N	0.091		mg N/L	0.01	0.02
5/14/2007 10:15	WIM-1	Nutrients	NO2NO3-N	0.006	I	mg N/L	0.004	0.01
5/14/2007 10:15	WIM-1	Nutrients	O-Phosphate-P	0.84		mg P/L	0.04	0.1
5/14/2007 10:15	WIM-1	Nutrients	Sulfate	54		mg SO4/L	0.4	1
5/14/2007 10:15	WIM-1	Nutrients	Kjeldahl Nitrogen	1.7		mg N/L	0.08	0.2
5/14/2007 10:15	WIM-1	Nutrients	Total-P	0.98		mg P/L	0.02	0.06
5/14/2007 10:15	WIM-1	Nutrients	TSS	4	I	mg/L	4	16
5/14/2007 10:15	WIM-1	Field Parameters	Dissolved Oxygen	0.78		mg/L		
5/14/2007 10:15	WIM-1	Field Parameters	Sample Depth	0.07		m		
5/14/2007 10:15	WIM-1	Field Parameters	Specific Conductance	821		umhos/cm		
5/14/2007 10:15	WIM-1	Field Parameters	Temperature	21.24		C		
5/14/2007 10:15	WIM-1	Field Parameters	pH	6.89				

Appendix E. Chemical

Date Sampled	Field ID	Anaylsis Group	Component	Result	Remark	Units	MDL	PQL
5/14/2007 10:05	BLANK	Metals	Mercury	0.12	U	ug/L	0.12	0.5
5/14/2007 10:05	BLANK	Metals	Aluminum	30	U	ug/L	30	120
5/14/2007 10:05	BLANK	Metals	Calcium	0.05	U	mg/L	0.05	0.2
5/14/2007 10:05	BLANK	Metals	Iron	10	U	ug/L	10	40
5/14/2007 10:05	BLANK	Metals	Magnesium	0.03	U	mg/L	0.03	0.12
5/14/2007 10:05	BLANK	Metals	Arsenic	0.5	U	ug/L	0.5	2
5/14/2007 10:05	BLANK	Metals	Cadmium	0.02	U	ug/L	0.02	0.08
5/14/2007 10:05	BLANK	Metals	Chromium	1	U	ug/L	1	4
5/14/2007 10:05	BLANK	Metals	Copper	0.25	U	ug/L	0.25	1
5/14/2007 10:05	BLANK	Metals	Lead	0.2	U	ug/L	0.2	0.8
5/14/2007 10:05	BLANK	Metals	Nickel	0.25	U	ug/L	0.25	1
5/14/2007 10:05	BLANK	Metals	Selenium	0.5	U	ug/L	0.5	2
5/14/2007 10:05	BLANK	Metals	Silver	0.025	U	ug/L	0.025	0.1
5/14/2007 10:05	BLANK	Metals	Zinc	5	U	ug/L	5	20
5/14/2007 10:05	BLANK	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
5/14/2007 10:05	BLANK	Nutrients	NO2NO3-N	0.009	I	mg N/L	0.004	0.01
5/14/2007 10:05	BLANK	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
5/14/2007 10:05	BLANK	Nutrients	Kjeldahl Nitrogen	0.08	U	mg N/L	0.08	0.2
5/14/2007 10:05	BLANK	Nutrients	Total-P	0.02	U	mg P/L	0.02	0.06
5/14/2007 10:05	BLANK	Pesticides	Alachlor	0.59	UJ	ug/L	0.59	2.4
5/14/2007 10:05	BLANK	Pesticides	Ametryn	0.049	UJ	ug/L	0.049	0.2
5/14/2007 10:05	BLANK	Pesticides	Atrazine	0.049	U	ug/L	0.049	0.2
5/14/2007 10:05	BLANK	Pesticides	Azinphos Methyl	0.2	U	ug/L	0.2	0.8
5/14/2007 10:05	BLANK	Pesticides	Bromacil	0.2	U	ug/L	0.2	0.8
5/14/2007 10:05	BLANK	Pesticides	Butylate	0.2	UJ	ug/L	0.2	0.8
5/14/2007 10:05	BLANK	Pesticides	Chlorpyrifos Ethyl	0.049	U	ug/L	0.049	0.2
5/14/2007 10:05	BLANK	Pesticides	Chlorpyrifos Methyl	0.098	UJ	ug/L	0.098	0.39
5/14/2007 10:05	BLANK	Pesticides	Diazinon	0.049	U	ug/L	0.049	0.2
5/14/2007 10:05	BLANK	Pesticides	Ethion	0.049	U	ug/L	0.049	0.2
5/14/2007 10:05	BLANK	Pesticides	Ethoprop	0.098	U	ug/L	0.098	0.39
5/14/2007 10:05	BLANK	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8
5/14/2007 10:05	BLANK	Pesticides	Fonofos	0.098	UJ	ug/L	0.098	0.39
5/14/2007 10:05	BLANK	Pesticides	Hexazinone	0.098	U	ug/L	0.098	0.39
5/14/2007 10:05	BLANK	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
5/14/2007 10:05	BLANK	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	1
5/14/2007 10:05	BLANK	Pesticides	Metolachlor	0.49	UJ	ug/L	0.49	2
5/14/2007 10:05	BLANK	Pesticides	Metribuzin	0.098	UJ	ug/L	0.098	0.39
5/14/2007 10:05	BLANK	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.8
5/14/2007 10:05	BLANK	Pesticides	Naled	0.78	U	ug/L	0.78	3.1
5/14/2007 10:05	BLANK	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
5/14/2007 10:05	BLANK	Pesticides	Parathion Ethyl	0.15	UJ	ug/L	0.15	0.6

Appendix E. Chemical

Date Sampled	Field ID	Anaylsis Group	Component	Result	Remark	Units	MDL	PQL
5/14/2007 10:05	BLANK	Pesticides	Parathion Methyl	0.098	U	ug/L	0.098	0.39
5/14/2007 10:05	BLANK	Pesticides	Phorate	0.049	U	ug/L	0.049	0.2
5/14/2007 10:05	BLANK	Pesticides	Prometryn	0.15	UJ	ug/L	0.15	0.6
5/14/2007 10:05	BLANK	Pesticides	Simazine	0.049	U	ug/L	0.049	0.2
5/14/2007 10:05	BLANK	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	1,2-Dichlorobenzene	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	1,3-Dichlorobenzene	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	1,4-Dichlorobenzene	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	2,4-Dichlorophenol	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	2,4-Dimethylphenol	9.9	U	ug/L	9.9	40
5/14/2007 10:05	BLANK	Priority Organic Pollutants	2,4-Dinitrophenol	15	U	ug/L	15	59
5/14/2007 10:05	BLANK	Priority Organic Pollutants	2,4-Dinitrotoluene	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	2,6-Dinitrotoluene	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	2-Chloronaphthalene	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	2-Chlorophenol	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3	U	ug/L	3	12
5/14/2007 10:05	BLANK	Priority Organic Pollutants	2-Nitrophenol	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	3,3'-Dichlorobenzidine	40	UJ	ug/L	40	160
5/14/2007 10:05	BLANK	Priority Organic Pollutants	4,4'-DDD	1.5	U	ug/L	1.5	5.9
5/14/2007 10:05	BLANK	Priority Organic Pollutants	4,4'-DDE	1.5	U	ug/L	1.5	5.9
5/14/2007 10:05	BLANK	Priority Organic Pollutants	4,4'-DDT	1.5	U	ug/L	1.5	5.9
5/14/2007 10:05	BLANK	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2	U	ug/L	2	7.9
5/14/2007 10:05	BLANK	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	59
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Acenaphthene	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Acenaphthylene	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Aldrin	1.5	U	ug/L	1.5	5.9
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Anthracene	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Benzidine	99	UJ	ug/L	99	400
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Benzo(a)anthracene	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Benzo(a)pyrene	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Benzo(b)fluoranthene	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Benzo(k)fluoranthene	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3	U	ug/L	3	12
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	15	U	ug/L	15	59
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Butyl benzyl phthalate	5	U	ug/L	5	20

Appendix E. Chemical

Date Sampled	Field ID	Anaylsis Group	Component	Result	Remark	Units	MDL	PQL
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Chrysene	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Di-n-butyl phthalate	5	U	ug/L	5	20
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Di-n-octyl phthalate	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Dieldrin	1.5	U	ug/L	1.5	5.9
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Diethyl phthalate	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Dimethyl phthalate	50	U	ug/L	50	200
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Endosulfan I	4	U	ug/L	4	16
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Endosulfan II	4	U	ug/L	4	16
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Endosulfan sulfate	1.5	U	ug/L	1.5	5.9
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Endrin	1.5	UJ	ug/L	1.5	5.9
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Endrin aldehyde	4	U	ug/L	4	16
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Fluoranthene	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Fluorene	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Heptachlor	1.5	U	ug/L	1.5	5.9
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Heptachlor epoxide	1.5	U	ug/L	1.5	5.9
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Hexachlorobenzene	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Hexachlorobutadiene	3	U	ug/L	3	12
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Hexachlorocyclopentadiene	3	U	ug/L	3	12
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Hexachloroethane	3	U	ug/L	3	12
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Isophorone	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2	U	ug/L	2	7.9
5/14/2007 10:05	BLANK	Priority Organic Pollutants	N-Nitrosodimethylamine	2	U	ug/L	2	7.9
5/14/2007 10:05	BLANK	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3	U	ug/L	3	12
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Naphthalene	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Nitrobenzene	2	U	ug/L	2	7.9
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Pentachlorophenol	3	U	ug/L	3	12
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Phenanthrene	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Phenol	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	Pyrene	0.99	U	ug/L	0.99	4
5/14/2007 10:05	BLANK	Priority Organic Pollutants	alpha-BHC	1.5	U	ug/L	1.5	5.9
5/14/2007 10:05	BLANK	Priority Organic Pollutants	beta-BHC	1.5	U	ug/L	1.5	5.9
5/14/2007 10:05	BLANK	Priority Organic Pollutants	delta-BHC	1.5	U	ug/L	1.5	5.9
5/14/2007 10:05	BLANK	Priority Organic Pollutants	gamma-BHC	1.5	U	ug/L	1.5	5.9

The Bioassay of City of Waldo Wastewater Treatment Facility sampled on May 14, 2007. NPDES #FL0042242.

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 4 2 2 4 2 11	12 0 7 0 5 1 4	18 B	19 S	20 1

Remarks

66

The Priority Pollutants Analysis of City of Waldo Wastewater Treatment Facility sampled on May 14, 2007. NPDES #FL0042242.

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 4 2 2 4 2 11	12 0 7 0 5 1 4	18 X	19 S	20 1

Remarks

66

Biological Analyses of City of Waldo Wastewter Treatment Facility sampled on May 14, 2007. NPDES #FL0042242.

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 4 2 2 4 2 11	12 0 7 0 5 1 4	18 S	19 S	20 1

Remarks

66