

Effluent Quality Assessment

East Central Regional WWTF

Palm Beach County

NPDES #FL0041360

Sampled July 16, 2007

November 2007

Biology Section
Bureau of Laboratories
Division of Resource Assessment and Management

Quality Manual No. 870346G
NELAC Certification No. E31780

East Central Regional WWTF, 4325 North Haverhill Road, West Palm Beach, Palm Beach County, Florida, 33409, NPDES #FL0041360. Effluent samples for this facility were collected on July 16, 2007.

Introduction

East Central Regional WWTF has two treatment plants: a complete-mix conventional activated-sludge domestic wastewater treatment plant providing secondary treatment with a design flow of 70 million gallons per day (MGD) average annual daily flow (AADF); and an advanced wastewater plant with a design flow of 10 MGD AADF, which provides additional treatment to the secondarily treated effluent from the first treatment plant. The facility (including both treatment plants) has the following units: four mechanical bar/filter screens and one manual bypass bar screen, two grit removal units, an aerated surge basin, three fine-bubble diffused aeration basins, six blowers, eight clarifiers, two chlorine contact chambers, an aerobic digester, two injection-well effluent pump stations, four belt-filter presses, a wet-scrubber odor control system, six conventional deep-bed denitrifying sand filters, two ballasted-flocculation trains, two traveling-bridge filters and an ultraviolet-light disinfection channel. Effluent from the chlorine contact chambers (CCCs) is disposed primarily by pumping into underground injection wells. A portion of the effluent from the CCCs is directed to the advanced wastewater plant for further treatment prior to discharge through Outfall D002 to the Class III freshwaters of the Isolated Receiving Wetlands (consists of approximately 590 hectares [1,458 acres] of an existing wetland). The AADF through Outfall D002 from June 1, 2006 through May 31, 2007, was 3.168 MGD. The AADF to the underground injection wells during the same period was approximately 37.95 MGD. Outfall D002 consists of a 0.51 m (20 inch) diameter distribution main and a distribution header. The point of discharge for Outfall D002 is located approximately at latitude 26º 44' 35" N, longitude 80º 09' 03" W. Residuals sludge is hauled to the Palm Beach County Solid Waste Authority for composting.

The facility has no Administrative Orders or Consent Orders. The facility has no mixing zones. A review of Discharge Monitoring Report (DMR) for the past year did not reveal any permit limit or discharge violations. The data trend was deemed satisfactory. (Facility information provided by Meghna Pandya of FDEP Southeast District.)

Methods

Samples were collected from the EFF-05 NPDES sampling point (ultraviolet irradiation chamber prior to reclaimed water pump station to the Isolated Receiving Wetland) for Outfall D002 by Terry Davis (FDEP Southeast District) 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 48-hour acute screening toxicity tests and algal growth potential test were performed following internal DEP SOPs TA07_01, TA07_02, and TA08_01 through TA08_09. All internal DEP SOPs are available on the web at: http://www.floridadep.org/labs/cgi-bin/sop/biosop.asp. While the 48-hour acute screening toxicity test does not reflect the permit required conditions, the Department uses it to provide reasonable assurance that the facility does not adversely affect waters of the state.

Toxicity Test Results

Tests were performed July 17 - 19, 2007.

Ceriodaphnia dubia 48-hour acute screening bioassay – LC_{50} > 100%, 5% mortality* in 100% sample at 48 hours

Cyprinella leedsi 48-hour acute screening bioassay – LC_{50} > 100%, 0% mortality* in 100% sample at 48 hours

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

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) was 166.0 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).

See Table 1 for AGP results.

Chemistry Results

Total residual chlorine (TRC) was not measured in the bioassay sample in the field. The TRC (0.04 mg/L) detected in the bioassay sample in the laboratory was likely the result of interference in the sample since the samples were collected prior to the chlorine contact chambers. Total ammonia was not detected in the bioassay sample in the laboratory. The total ammonia concentration in the sample collected and preserved for chemical analysis 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.

Effluent pH (6.4) fell outside of the permit limit range (6.5-8.5 SU), but did not violate Class III fresh water quality criteria (6.0-8.5 SU) (62-302.530(51), F.A.C.). Barium, bromodichloromethane, chloride, chloroform, dibromochloromethane, fluoride, manganese, nickel, sodium, and sulfate were detected in the effluent at levels that comply with Class III fresh water quality criteria (62-302.530, F.A.C.). Aluminum, bromoform, cadmium, copper, lead, thallium, and zinc were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL). Cadmium and lead were detected in the method blanks.

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

Conclusion

The effluent sample collected from the EFF-05 NPDES sampling point for Outfall D-002 for this facility on July 16, 2007, was not acutely toxic to either test species during the 48-hour acute screening bioassays. The effluent AGP result exceeded the "problem" threshold for fresh receiving waters, suggesting nutrient enrichment may be an issue. Effluent pH (6.4 SU) fell

outside of the permit limit range (6.5-8.5 SU), but did not violate Class III fresh water quality criteria (62-302.530(51), 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 orthophosphate (OP) and total phosphorus (TP) limitation of the freshwater species *Pseudokirchneriella subcapitata* for the sample collected from East Central Regional WWTF on July 16, 2007.

East Central Regional Wastewater Treatment Facility					
Location	AGP (measured)	Predicted AGP (OP) ± 20%	Predicted AGP (TP) ± 20%	Inorganic N:P ratio	Total N:P ratio
Effluent	166.0	60.2 ± 12.0	60.2 ± 12.0	17.4	23.9

Table 2. Effluent limits, Class III Criteria for predominantly fresh waters and chemical and microbiological data for samples collected at the East Central Regional Wastewater Treatment Facility on July 16, 2007.

East Central Regional Wastewater Treatment Facility NPDES #Fl0041360	Class III Stds	Effluent Limits	Effluent	
Organic Constituents (µg/L)				
Bromodichloromethane	≤ 22 a	-	6.3	
Bromoform	≤ 360 a	-	0.55	I
Chloroform	≤ 470.8 a	-	7.5	
Dibromochloromethane	≤ 34 a	-	3.6	
Metals (µg/L unless otherwise noted)				
Aluminum	-	-	6.8	I
Arsenic	≤ 50	-	0.5	U
Barium	-	-	2.53	A
Cadmium	≤ 0.4 b	-	0.07	IVf
Calcium (mg/L)	-	-	51.9	A
Chromium-III	≤ 138.3 b	-	1	U
Copper	≤ 15.3 b	-	0.84	I
Iron	≤ 1,000	-	430	A
Lead	≤ 6.6 b	-	0.52	IVf
Magnesium (mg/L)	-	-	11.8	A
Manganese	-	-	22.3	A
Mercury	-	-	0.12	U
Nickel	≤ 85.0 b	-	4.78	A
Selenium	≤ 5.0	-	0.5	U
Silver	≤ 0.07	-	0.025	U
Sodium	-	-	160	A
Zinc	≤ 195.5 b	-	14	I
Nutrients (mg/L)				
Ortho-phosphate	-	-	0.14	
Total Phosphorus	-	-	0.14	
Total Ammonia	-	≤ 2	0.03	
Un-ionized Ammonia	≤ 0.02	-	≤ 0.02	c
Nitrate and Nitrite	-	-	2.4	
Total Kjeldahl Nitrogen	-	-	0.95	
Organic Nitrogen	-	-	0.92	c
Total Nitrogen	-	≤ 6 s	3.35	c
General Physical and Chemical Parameters				
Dissolved Oxygen (mg/L)	≥ 5.0	-	6.7	c
pH (SU)	6.0 - 8.5	6.5 - 8.5 s	6.4	
Conductivity (µmhos/cm)	≤ 1,275	-	1,212	
Temperature °C	-	-	31.0	
Total Residual Chlorine (mg/L)	≤ 0.01	-	0.04	£ *
Total Suspended Solids (mg/L)	-	≤ 5 s	4	U
Turbidity (NTU)	< 29 t	-	1	
Color (pt-Co)	-	-	15	
CBOD, 5 day (mg/L), N - inhibited	-	≤ 10 s	0.46	I
Chloride (mg/L)	-	-	270	
Flow (MGD) advanced treatment plant	≤ 10 a	-	3.168	a
Flow (MGD) secondary treatment plant	≤ 70 a	-	37.95	a
Fluoride (mg/L)	≤ 10	-	0.68	
Sulfate (mg/L)	-	-	120	
Alpha, Total (pCi/L)	≤ 15	-	1.7	U
Alpha-Counting Error (pCi/L)	-	-	1.1	
Radium 226 (pCi/L)	-	-	0.5	
Radium 226-Counting Error (pCi/L)	-	-	0.1	
Radium 228 (pCi/L)	-	-	1	U
Radium 228-Counting Error (pCi/L)	-	-	0.7	
Radium 226 + 228 (pCi/L)	≤ 5	-	0.5	c
Hardness (mg $CaCO_3$)	-	-	178.19	c

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 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

V - Analyte was detected in both sample and method blank

£ * TRC measured in Central Lab, result likely due to interference

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2007-07-16-30
East Central Regional WWTP

Requester: Shannan Bogdanov
Field Report Prepared By: T. Davis
Collected By: T Davis
Send Final Report To Terry Davis or Bill Theil
Sampling Agency: DEP - SED

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

Lab ID *	Location / Field ID	Matrix / Temp / pH	Comp / Grab; Collection (begin) Date Time Eastern Central	Tot Res Chlorine (mg/L) / Diss Oxygen (mg/L)	Collection (end) Date Time Eastern Central / Storet Station Number	Sample Depth / Salinity / Sp Conductance / NPDES Number	Bottle Group(s)**
	Location D-002 EFF-05 Field ID 5J-ECR-1	Matrix (Include type e.g. Salt, Fresh, etc) water, fresh Temp (C) 31.02 pH 6.40 Latitude o ' " Longitude o ' "	☐ Comp ☒ Grab Collection (begin) Date 7/16/07 Time 1110 Eastern Central Tot Res Chlorine (mg/L) see below Diss Oxygen 93.1%	Collection (end) Date Time Eastern Central Storet Station Number	Sample Depth .01 ☒ m ☐ ft ☐ Salinity (PPTh) ☒ Sp Conductance (umho/cm) 1212 NPDES Number	A
	Location Blank Field ID 5J-ECR-2	Matrix (Include type e.g. Salt, Fresh, etc) Water, D.I. Temp (C) pH Latitude o ' " Longitude o ' "	☐ Comp ☒ Grab Collection (begin) Date 7/16/07 Time 1145 Eastern Central Tot Res Chlorine (mg/L) Diss Oxygen (mg/L)	Collection (end) Date Time Eastern Central Storet Station Number	Sample Depth .01 ☒ m ☐ ft ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm) NPDES Number	B
	Location Field ID	Matrix (Include type e.g. Salt, Fresh, etc) Temp (C) pH Latitude o ' " Longitude o ' "	☐ Comp ☐ Grab Collection (begin) Date Time Eastern Central Tot Res Chlorine (mg/L) Diss Oxygen (mg/L)	Collection (end) Date Time Eastern Central Storet Station Number	Sample Depth ☐ m ☐ ft ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm) NPDES Number	Bottle Group(s)**
	Location Field ID	Matrix (Include type e.g. Salt, Fresh, etc) Temp (C) pH Latitude o ' " Longitude o ' "	☐ Comp ☐ Grab Collection (begin) Date Time Eastern Central Tot Res Chlorine (mg/L) Diss Oxygen (mg/L)	Collection (end) Date Time Eastern Central Storet Station Number	Sample Depth ☐ m ☐ ft ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm) NPDES Number	Bottle Group(s)**

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
T Davis	7/16/1340	DHL	ABJ	7/17/07 0845				

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

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Facility does not use Cl for disinfection; uses U.V.

PPV 7/17/07 2 BOTTLES

FDEP Biology Laboratory - Acute Screen Bioassay Bench Sheets

Facility: East Central Regional WWTP

Address: 4325 North Haverhill Road

City: West Palm Beach County: Palm Beach

Contact/District: Terry Davis / Southeast

NPDES Permit #: FL0041360

LIMS Job # TLH-2007-07-17-88 LIMS Sample #: 1026464

Lims Data Entry: 7-20-07 MF Data Entry Verification: 7-20-07 JA

Sample Collection: Date: 7/10/07 Time: 1110

Hold Time Start: Date: 7/10/07 Time: 1110

Comments:

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

Test Type: (Screen)
Static / Static Renewal / Flow-through
Test Duration: (48) 96 Hours.

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

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

Initial sample handling:

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

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

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

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

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

Sample Validation:

Temperature: Shipped ≤6°C (Yes) No 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. 24.3 max 26.0 mean 25.2

Incubator # ____ min. ____ max. ____ mean ____

Room B246 min. 24.9 max 25.9 mean 25.5

Investigators' Signatures

James Daniels

Dave Arnold

Peter Ucinski

Marshall Faircloth

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:	Original Sample	Method	Measured by	Verified by
Field Total Residual Cl_2 (mg/L):	N/A	N/A	N/A	N/A		N/A	N/A (A)	T. Davis	MF
Lab Total Residual Cl_2 (mg/L):	<0.03	<0.03				0.04	HACH	PDV	JD
Alkalinity (mg/L as $CaCO_3$):	84	140				77	HACH	PDV	JD
Hardness (mg/L as $CaCO_3$):	89	132				166	HACH	PDV	JD
Total Ammonia (mg/L as N):	<0.017	<0.017				<0.017	DENVER	MF	JD
Salinity (ppth):	<1	<1				<1	YSI / Mettler	JD	MF

(A) facility does not use chlorine for disinfection MF-7-20-07

FDEP Biology Laboratory - Acute Screen Bioassay Bench Sheets v.1.4 8/12/05

Appendix B. (cont.)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1026464 Test #: 1 SOP#:TA 07-01 Test Started: Date 7-17-07 Time: ~~14:40~~ 12:40BA

Organism/Batch/Age: C.dubia/29-07/<24HR. Test Ended: Date 7/19/07 Time: 1305

Chamber/Test Volume: 30 / 20 ml Diluent/ Batch: 20% DMW / 7-13-07

Food/Batch: YCT 1-7-07 P.sub 1-07 Artemia 0hr ~~1-07-07~~ MF 24hr — 48hr — 72hr — Artemia Lot# ~~GSt~~ MF

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	5	5			
	B	B	5	5	5			
	C	C	5	5	5			
	D	D	5	5	5			
100%	A	A	5	5	5			
	B	B	5	5	5			
	C	C	5	5	5			
	D	D	5	5	4 1D			
Loaded/Verified by: BA / JD		Checked by:	JD	JD	JD			

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

Comments:

Test Results:

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

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

If Calculated: 95% CI ________ Method ________

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

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Appendix B. (cont.)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1026464 Test #: mt 2/2 SOP#:TA 07-02 Test Started: Date 7/17/07 Time: 13:45

Organism/Batch/Age: C. leedsi / 7-17-07 / 13 days Test Ended: Date 7/19/07 Time: 13:00

Chamber/Test Volume: 1000 / 500 ml Diluent/ Batch: well / 7-17-07

Food/Batch: YCT — P.sub — Artemia 0hr 107-07 24hr — 48hr — 72hr — Artemia Lot# 107-07 GSL 536.90

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	B1	5	5	5			
	B	B2	5	5	5			
	C	B3	5	5	5			
	D	B4	5	5	5			
100%	A	B5	5	5	5			
	B	B6	5	5	5			
	C	B7	5	5	5			
	D	B8	5	5	5			
Loaded/Verified by: JD / BA		Checked by:	JD	JD	JD			

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

Comments:

Test Results:

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

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

If Calculated: 95% CI______ Method______

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

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FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 1026464 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	—	M			
pH (S.U.)	8.1	~~8~~ JD	8.1			
Temperature °C	24.1	~~24.4~~ JD	24.9			
Dissolved Oxygen mg/L	7.6	—	7.8			
Conductivity (µmhos) mmhos	176	~~187~~ JD	187			
(initials) Measured by:	BA		JD			
(initials) Recorded by:	BA		JD			

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		M			
pH (S.U.)	7.3		8.1			
Temperature °C	24.0		24.8			
Dissolved Oxygen mg/L	7.6		7.7			
Conductivity (µmhos) mmhos	189		1288			
(initials) Measured by:	BA		JD			
(initials) Recorded by:	~~BA~~ JD		JD			

Comments:

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

Comments:

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

Comments:

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FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 1026464 **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	8.3			
Temperature °C	24.9	24.6	24.5			
Dissolved Oxygen mg/L	7.6	7.2	7.7			
Conductivity µmhos mmhos	267	272	285			
(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.)	7.2	7.9	8.0			
Temperature °C	24.7	24.6	24.4			
Dissolved Oxygen mg/L	7.1	7.1	7.7			
Conductivity µmhos mmhos	1179	1174	1209			
(initials) Measured by:	JD	JD	JD			
(initials) Recorded by:	JD	JD	JD			

Comments:

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

Comments:

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

Comments:

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Appendix C. SRT Bench Sheets and Statistical Analysis

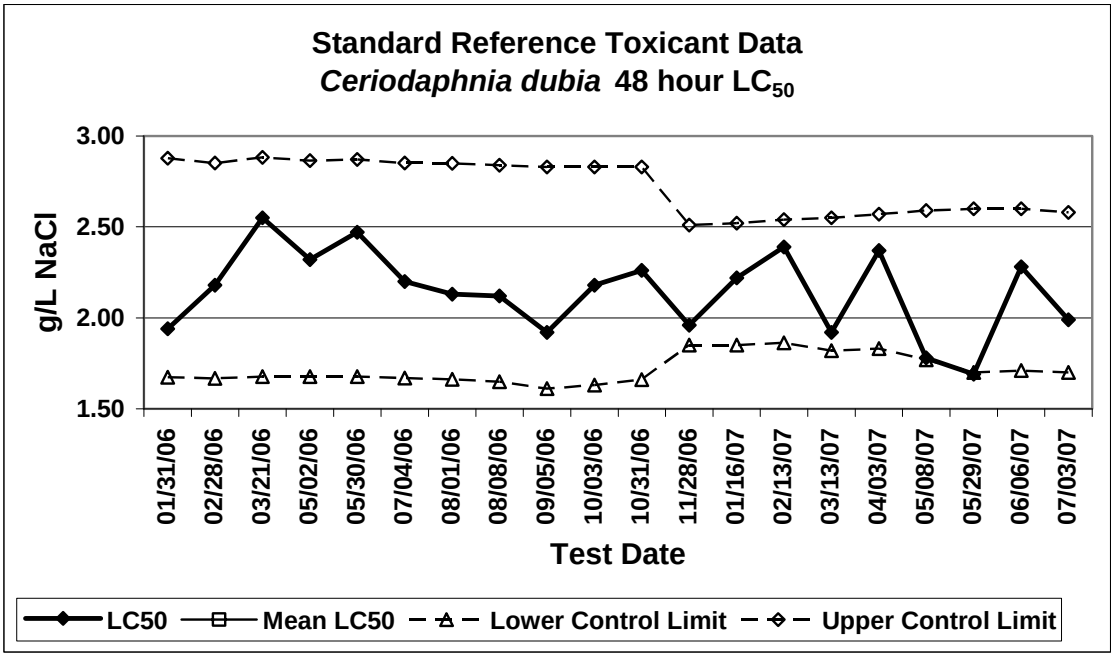
Florida Department of Environmental Protection
Bureau of Laboratories

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

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
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	2.20	0.30	1.61	2.83
10/03/06	2.18	2.20	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	2.20	0.17	1.86	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
05/29/07	1.69	2.14	0.23	1.70	2.60
06/06/07	2.28	2.16	0.22	1.71	2.60
07/03/07	1.99	2.14	0.22	1.70	2.58

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

CV = 10.25
EPA reference 75th quartile CV = 29%



Appendix C. (continued)

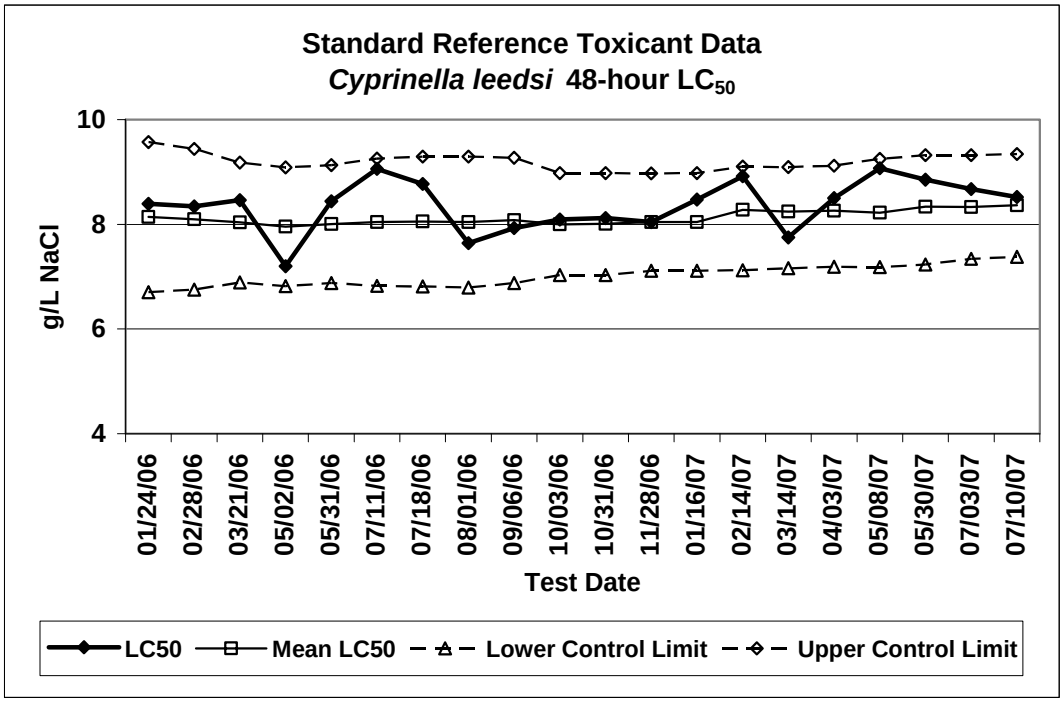
Florida Department of Environmental Protection
Bureau of Laboratories

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
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	8.28	0.50	7.12	9.10
03/14/07	7.75	8.24	0.50	7.16	9.09
04/03/07	8.50	8.26	0.48	7.19	9.12
05/08/07	9.07	8.22	0.52	7.18	9.25
05/30/07	8.85	8.34	0.51	7.23	9.32
07/03/07	8.67	8.33	0.50	7.34	9.32
07/10/07	8.52	8.36	0.49	7.38	9.34

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

CV = 5.85
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 2005.0) *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 #: DHW 1-7-07

Toxicant/ Batch#: ~~NaCl~~ N.S.I. 7-2-07 BA

Test Beginning: Date: 7/3/07 Time: 12:35

Test Ending: Date: 7-7-07 Time: 0930

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	0.03	Hach	~~PAV~~
Alkalinity (mg/L as $CaCO_3$):	86	Hach	BA
Hardness (mg.L as $CaCO_3$):	997	Hach	BA
Total Ammonia (mg/L as N):	<0.017	Denver	MF
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 27-07 / 24hr.

Feeding: (Prior to test) (Prior to renewal) / Daily

Food: YCT *P.subcapitata* Artemia: Lot # —

Food Batch: 1-07 1-7-07 0hr — 24hr — 48hr — 72hr —

Chamber size: 30 mL

Test volume: 20 mL per replicate

Conc. (g/L) µg/L mg/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	A	5	5	5	8.2		8.1	25.0		24.6	7.8		7.1	0.170		0.181
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	5												
1.5	A	A	5	5	5	8.1		8.1	25.0		24.2	7.8		7.3	2.90		3.22
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	5												
2.0	A	A	3	5	2 3D	8.1		8.1	25.1		24.1	7.7		7.3	3.8		4.3
	B	B	5	5	3 2D												
	C	C	5	5	4 1D												
	D	D	5	5	1 4D												
2.5	A	A	5	5	0 5D	8.1		8.1	25.1		24.0	7.8		7.2	4.67		5.45
	B	B	5	5	0 5D												
	C	C	5	5	0 5D												
	D	D	5	5	1 4D												
3.0	A	A	5	5	0 5D	8.1		8.1	25.0		24.0	7.7		7.3	5.61		6.77
	B	B	5	5	0 5D												
	C	C	5	4 1D	0 4D												
	D	D	5	4 1D	0 4D												
4.0	A	A	5	1 4D	0 1D	8.1		8.1	24.9		24.1	7.6		7.4	7.27		7.65
	B	B	5	0 5D	—												
	C	C	5	0 5D	—												
	D	D	5	1 4D	0 1D												
	A																
	B																
	C																
	D																
Loaded / measured by:			BA	BA	BA	BA		BA	BA		BA	BA		BA	BA		BA
Recorded by:			BA	BA	BA	BA		BA	BA		BA	BA		BA	BA		BA

Investigators' Signatures

Nicole Wellendorf
REVIEWER

Concentrations prepared by: BA

Loading verified by: ~~BA~~ ~~PAV~~

Light Intensity: 50-100 Ft. candles

Photoperiod: 16 hours Light / 8 hours dark

Temperature Range °C:

Incubator # 2 min 24.9 max 25.9 mean 25.4

Incubator # ___ min ___ max ___ mean ___

Room B246 min 24.9 max 26.1 mean ~~25.4~~ 25.4 3.0

Comments:

Statistics: Method: Spearman-Karber

48 / 96 hour LC_{50}: 1.99

95% Confidence Interval: lower 1.87 upper 2.11

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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 #: DHW 1-7-07
Toxicant/ Batch#: NaCl 7-2-07

Test Beginning: Date: 7/3/07 Time: 1235
Test Ending: Date: 7-7-07 Time: 0930

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	40.03	Hach	BA
Alkalinity (mg/L as $CaCO_3$):	84 86	Hach	BA
Hardness (mg.L as $CaCO_3$):	89 97	Hach	BA
Total Ammonia (mg/L as N):	10.017	Denver	MF
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 27-07/ 24 HR.
Feeding: Prior to test / Prior to renewal / Daily
Food: YCT *P.subcapitata* Artemia: Lot #_____
Food Batch: 1-07 1-7-07 0hr 24hr 48hr 72hr
Chamber size: 30 mL
Test volume: 20 mL per replicate

Conc. µg/L mg/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 (µmhos/cm) 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr
Control	A	A	5	5	5	8.1		8.0	24.9		24.6	7.9		7.9	0.171		0.196
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	5												
1.5	A	A	5	5	5	8.1		8.0	25.5		24.6	7.5		7.9	2.96		3.12
	B	B	5	4 1D	4												
	C	C	5	5	4 1D												
	D	D	5	5	4 1D												
2.0	A	A	2	1 1D	1	8.1		8.0	25.5		24.6	7.4		7.8	3.9		4.11
	B	B	3	2 1D	2												
	C	C	4	2 2D	2												
	D	D	1	1	1												
2.5	A	A	-	-	-	8.1		-	25.4		-	7.3			4.78		-
	B	B	-	-	-												
	C	C	-	-	-												
	D	D	1	0 1D	-		8.0			24.0			7.8			4.77	
3.0	A	A	-	-	-	8.1			25.1		-	7.3			5.56		-
	B	B	-	-	-												
	C	C	-	-	-												
	D	D	-	-	-		-						-			-	
4.0	A	A	-	-	-	-		-	-		-	-		-	-		-
	B	B	-	-	-												
	C	C	-	-	-												
	D	D	-	-	-		-			-			-			-	
	A																
	B																
	C																
	D																
Loaded / measured by:			BA	BA	MF	BA	BA	MF	BA	BA	MF	BA	BA	MF	BA	BA	MF
Recorded by:			BA	BA	MF	BA	BA	MF	MF	BA	MF	BA	BA	MF	BA	BA	MF

Investigators' Signatures
Jason Daniels
Patty Vichaile
Marshall Faircloth
Bruce Adams
Nicole Wellendorf
REVIEWER

Concentrations prepared by: BA
Loading verified by: BA
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min. 24.1 max. 25.4 mean 25.4
Incubator # ___ min. _____ max. _____ mean _____
Room B246 min. 24.8 max. 26.1 mean 24.4 25.4 SD

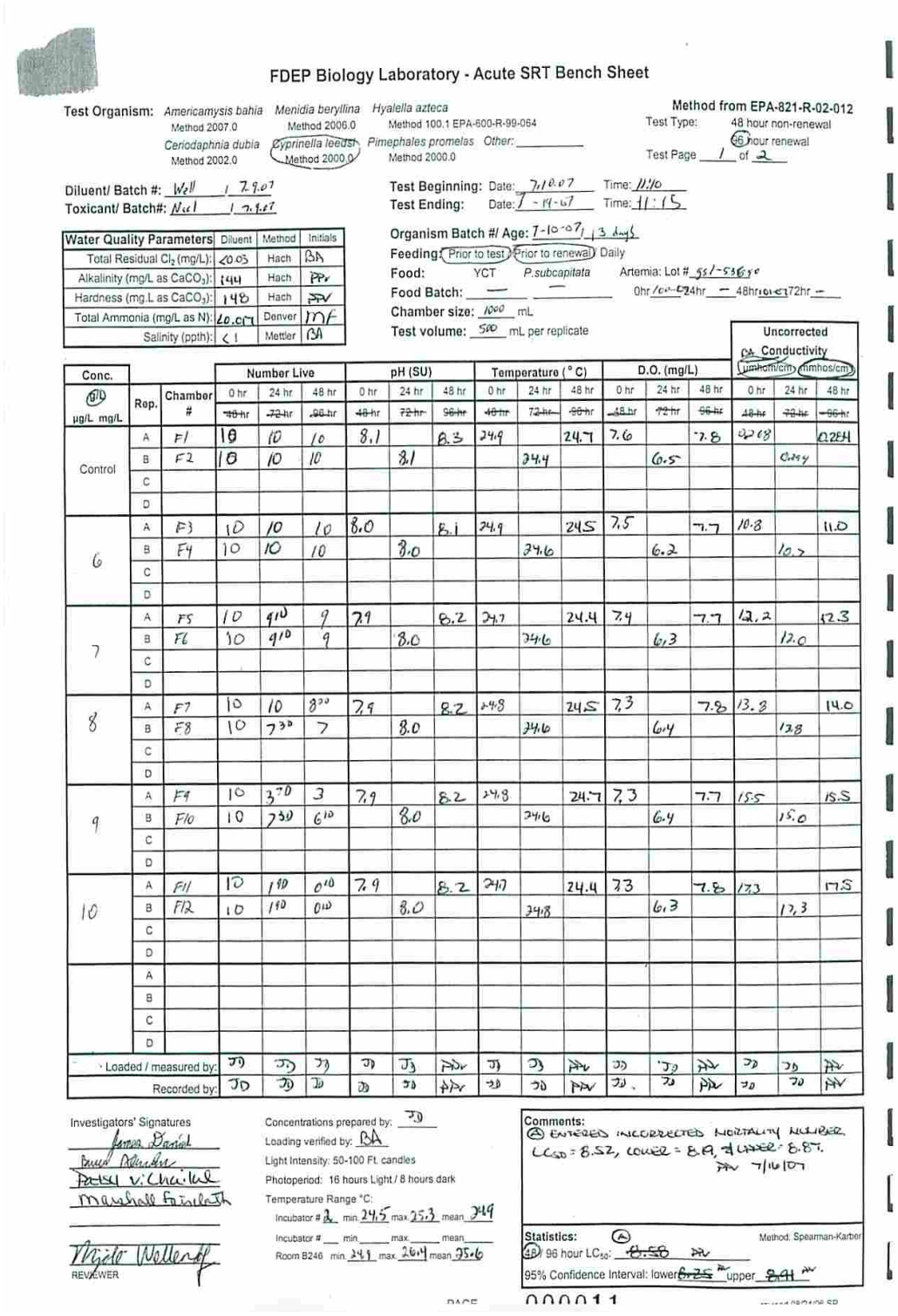
Comments:

Statistics: Method: Spearman-Karber
48 / 96 hour LC_{50}: 1.81
95% Confidence Interval: lower 1.68 upper 1.95

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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 / 7.9.07
Toxicant/ Batch#: NaCl / 7.9.07

Test Beginning: Date: 7/10.07 Time: 11:40
Test Ending: Date: 7-14-07 Time: 11:15

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	BA
Alkalinity (mg/L as $CaCO_3$):	144	Hach	PPV
Hardness (mg.L as $CaCO_3$):	148	Hach	PPV
Total Ammonia (mg/L as N):	<0.07	Denver	MF
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 7-10-07/ 13 days
Feeding: (Prior to test) (Prior to renewal) Daily
Food: YCT *P.subcapitata* Artemia: Lot # 551-536-50
Food Batch: — — 0hr/~~0~~ 24hr — 48hr 101-67 72hr —
Chamber size: 1000 mL
Test volume: 500 mL per replicate

Conc.			Number Live			pH (SU)			Temperature (°C)			D.O. (mg/L)			Uncorrected Conductivity (umhos/cm) (mmhos/cm)		
(%) µg/L mg/L	Rep.	Chamber #	0 hr	24 hr	48 hr	0 hr	24 hr	48 hr	0 hr	24 hr	48 hr	0 hr	24 hr	48 hr	0 hr	24 hr	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	F1	10	10	10	8.1		8.3	24.9		24.7	7.6		7.8	0.268		0.284
	B	F2	10	10	10		8.1			24.4			6.5			0.264	
	C																
	D																
6	A	F3	10	10	10	8.0		8.1	24.9		24.5	7.5		7.7	10.8		11.0
	B	F4	10	10	10		8.0			24.6			6.2			10.7	
	C																
	D																
7	A	F5	10	9[10]	9	7.9		8.2	24.7		24.4	7.4		7.7	12.2		12.3
	B	F6	10	9[10]	9		8.0			24.6			6.3			12.0	
	C																
	D																
8	A	F7	10	10	8[20]	7.9		8.2	24.8		24.5	7.3		7.8	13.8		14.0
	B	F8	10	7[30]	7		8.0			24.6			6.4			13.8	
	C																
	D																
9	A	F9	10	3[70]	3	7.9		8.2	24.8		24.7	7.3		7.7	15.5		15.5
	B	F10	10	7[30]	6[10]		8.0			24.6			6.4			15.0	
	C																
	D																
10	A	F11	10	1[90]	0[10]	7.9		8.2	24.7		24.4	7.3		7.8	17.3		17.5
	B	F12	10	1[90]	0[10]		8.0			24.8			6.3			17.3	
	C																
	D																
	A																
	B																
	C																
	D																
Loaded / measured by:			JD	JD	JD	JD	JD	PPV	JD	JD	PPV	JD	JD	PPV	JD	JD	PPV
Recorded by:			JD	JD	JD	JD	JD	PPV	JD	JD	PPV	JD	JD	PPV	JD	JD	PPV

Investigators' Signatures
James Daniel
Brad Robertson
Patsy V. Chaikin
Marshall Faircloth

Mirta Wellendorf
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 24.5 max 25.3 mean 24.9
Incubator # ___ min ___ max ___ mean ___
Room B246 min 24.9 max 26.4 mean 25.6

Comments:
(A) ENTERED INCORRECTED MORTALITY NUMBER. LC_{50} = 8.52, LOWER = 8.19, & UPPER = 8.87. PPV 7/16/07

Statistics: (A) Method: Spearman-Karber
(GB) 96 hour LC_{50}: ~~8.58~~ PPV
95% Confidence Interval: lower ~~8.25~~ PPV upper 8.91 PPV

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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 / (48)hour renewal
Test Page 2 of 2

Diluent/ Batch #: Well H2O / 7.9.07
Toxicant/ Batch#: NaCl / 7.9.07

Test Beginning: Date: 7/10/07 Time: 11:10
Test Ending: Date: 7-19-07 Time: 11:15

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	BA
Alkalinity (mg/L as $CaCO_3$):	144	Hach	PPV
Hardness (mg.L as $CaCO_3$):	148	Hach	PPV
Total Ammonia (mg/L as N):	<0.07	Denver	MF
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 7-10-07 / 13 days
Feeding: (Prior to test) (Prior to renewal) Daily
Food: YCT — *P.subcapitata* — Artemia: Lot # SK-536-50
Food Batch: — — 0hr 10-1 24hr — 48hr (repeat) 72hr —
Chamber size: 1000 mL
Test volume: 500 mL per replicate

Conc. (NTU) µg/L mg/L	Rep.	Chamber #	Number Live 0 hr / 24 hr / 48 hr			pH (SU) 0 hr / 24 hr / 48 hr			Temperature (°C) 0 hr / 24 hr / 48 hr			D.O. (mg/L) 0 hr / 24 hr / 48 hr			Uncorrected Conductivity µmhom/cm (mmhos/cm) 0 hr / 24 hr / 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	F1	10	10	10	8.2		8.2	24.3		24.7	8.1		7.0	0.274		0.280
	B	F2	10	10	10		8.2			24.1			6.8			0.280	
	C																
	D																
6	A	F3	10	10	10	8.0		8.1	24.2		24.5	7.7		7.1	11.0		11.2
	B	F4	10	10	10		8.1			24.3			6.5			10.6	
	C																
	D																
7	A	F5	9	9	9	8.0		8.1	24.3		24.7	7.7		7.0	12.7		12.9
	B	F6	9	9	9		8.0			24.7			6.3			12.0	
	C																
	D																
8	A	F7	8	8	8	8.0		8.1	24.4		24.8	7.8		6.8	14.3		14.6
	B	F8	7	7	7		8.0			24.3			6.2			14.3	
	C																
	D																
9	A	F9	3	3	3	8.0		8.1	24.4		24.7	7.7		6.9	15.4		15.8
	B	F10	6	5	4		8.0			24.4			6.2			15.5	
	C																
	D																
10	A	F11	—	—	—	—		—	—		—	—		—	—		—
	B	F12	—	—	—		—			—			—			—	
	C																
	D																
	A																
	B																
	C																
	D																
Loaded / measured by:			JD	JD	BA	PPV	JD	BA	PPV	JD	BA	PPV	JD	BA	PPV	JD	BA
Recorded by:			JD	JD	BA	PPV	JD	BA	PPV	JD	BA	PPV	JD	BA	PPV	JD	BA

Investigators' Signatures
James Dennis
Brad Rhodes
Patsy Vachalek
Marshall Faircloth
Nicole Welkerling
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 24.5 max 25.3 mean 24.9
Incubator # ___ min ___ max ___ mean ___
Room B246 min 24.9 max 26.4 mean 25.6

Comments:

Statistics: Method: Spearman-Karber
48 / (96) hour LC_{50}: 8.42
95% Confidence Interval: lower 8.10 upper 8.76

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Appendix C. (continued)

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

DATE: 07/03/07 DURATION: 48 hr TOXICANT: NaCl
SPECIES: *Ceriodaphnia dubia*

RAW DATA: Concentration (g/L)	Number Exposed	Mortalities
0.00	20	0
1.50	20	0
2.00	20	10
2.50	20	19
3.00	20	20
4.00	20	20

SPEARMAN-KARBER TRIM: 0.00%

SPEARMAN-KARBER ESTIMATES: LC50: 1.99
95% LOWER CONFIDENCE: 1.87
95% UPPER CONFIDENCE: 2.11

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

DATE: 07/10/07 DURATION: 48 hr TOXICANT: NaCl
SPECIES: *Cyprinella leedsi*

RAW DATA: Concentration (g/L)	Number Exposed	Mortalities
0.00	20	0
6.00	20	0
7.00	20	2
8.00	20	5
9.00	20	11
10.00	20	20

SPEARMAN-KARBER TRIM: 0.00%

SPEARMAN-KARBER ESTIMATES: LC50: 8.52
95% LOWER CONFIDENCE: 8.19
95% UPPER CONFIDENCE: 8.87

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: 7/9/07

Shipped to: FLDEP

P.O. No: N/A

Species	Quantity	Age	Brood Number	Temperature	Salinity
Mysidopsis bahia					
Menidia beryllina					
Cyprinella leedsi	250	12 DAYS	CL070627	25°C	
Pimephales promelas	250 ·	< 24 HRS	FM070709-0900	25°C	

Packed by:

Shipped Via: Fed Ex

Notes:

Thank you for your order.

Appendix D. (cont.)

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: 7/16/07

Shipped to: FL DEP

P.O. No: N/A

Species	Quantity	Age	Brood Number	Temperature	Salinity
Mysidopsis bahia					
Menidia beryllina					
Cyprinella leedsi	100 +	12 DAYS	CL070704	25°C	
Pimephales promelas					

Packed by:

Shipped Via: Fed Ex.

Notes:

Thank you for your order.

Appendix E. Chemical Analyses performed on the effluent from the East Central Regional Wastewater Treatment Facility Outfall D-002, sampled on July 16, 2007.

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/16/2007 11:10	Effluent	AGP/LN	Algal Growth Potential	166		mg DryWt/L	0.3	0.9
7/16/2007 11:10	Effluent	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	0.46	I	mg/L	0.2	2
7/16/2007 11:10	Effluent	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.92	U	ug/L	0.92	2.8
7/16/2007 11:10	Effluent	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.4	U	ug/L	0.4	1.2
7/16/2007 11:10	Effluent	Toxicology	Bioassay-Acute-Screen-FW-C.dubia, LC50	100	L	LC50		
7/16/2007 11:10	Effluent	Toxicology	Bioassay-Acute-Screen-FW-Fish, LC50	100	L	LC50		
7/16/2007 11:10	Effluent	Metals	Mercury	0.12	U	ug/L	0.12	0.5
7/16/2007 11:10	Effluent	Metals	Aluminum	6.8	I	ug/L	5	20
7/16/2007 11:10	Effluent	Metals	Barium	2.53	A	ug/L	0.3	1.2
7/16/2007 11:10	Effluent	Metals	Calcium	51.9	A	mg/L	0.02	0.08
7/16/2007 11:10	Effluent	Metals	Iron	430	A	ug/L	5	20
7/16/2007 11:10	Effluent	Metals	Magnesium	11.8	A	mg/L	0.005	0.02
7/16/2007 11:10	Effluent	Metals	Manganese	22.3	A	ug/L	0.1	0.4
7/16/2007 11:10	Effluent	Metals	Sodium	160	A	mg/L	0.75	3
7/16/2007 11:10	Effluent	Metals	Zinc	14	I	ug/L	5	20
7/16/2007 11:10	Effluent	Metals	Antimony	0.5	U	ug/L	0.5	2
7/16/2007 11:10	Effluent	Metals	Arsenic	0.5	U	ug/L	0.5	2
7/16/2007 11:10	Effluent	Metals	Beryllium	0.025	U	ug/L	0.025	0.1
7/16/2007 11:10	Effluent	Metals	Cadmium	0.07	IV	ug/L	0.02	0.08
7/16/2007 11:10	Effluent	Metals	Chromium	1	U	ug/L	1	4
7/16/2007 11:10	Effluent	Metals	Copper	0.84	I	ug/L	0.25	1
7/16/2007 11:10	Effluent	Metals	Lead	0.52	IV	ug/L	0.2	0.8
7/16/2007 11:10	Effluent	Metals	Nickel	4.78	A	ug/L	0.25	1
7/16/2007 11:10	Effluent	Metals	Selenium	0.5	U	ug/L	0.5	2
7/16/2007 11:10	Effluent	Metals	Silver	0.025	U	ug/L	0.025	0.1
7/16/2007 11:10	Effluent	Metals	Thallium	0.11	I	ug/L	0.1	0.4
7/16/2007 11:10	Effluent	Nutrients	Turbidity	1		NTU	0.05	0.05
7/16/2007 11:10	Effluent	Nutrients	Alkalinity	65		mg CaCO3/L	0.65	2.5
7/16/2007 11:10	Effluent	Nutrients	Chloride	270		mg Cl/L	2	5
7/16/2007 11:10	Effluent	Nutrients	Cyanide	0.005	U	mg CN/L	0.005	0.02
7/16/2007 11:10	Effluent	Nutrients	Color	15		PCU	5	5
7/16/2007 11:10	Effluent	Nutrients	Specific_Conductance	1140		umhos/cm	2	8
7/16/2007 11:10	Effluent	Nutrients	Fluoride	0.68		mg F/L	0.05	0.1

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/16/2007 11:10	Effluent	Nutrients	Ammonia-N	0.03		mg N/L	0.01	0.02
7/16/2007 11:10	Effluent	Nutrients	NO2NO3-N	2.4		mg N/L	0.04	0.1
7/16/2007 11:10	Effluent	Nutrients	O-Phosphate-P	0.14		mg P/L	0.004	0.01
7/16/2007 11:10	Effluent	Nutrients	Sulfate	120		mg SO4/L	2	5
7/16/2007 11:10	Effluent	Nutrients	Sulfide	0.05	U	mg S/L	0.05	0.2
7/16/2007 11:10	Effluent	Nutrients	Kjeldahl Nitrogen	0.95		mg N/L	0.08	0.2
7/16/2007 11:10	Effluent	Nutrients	Organic Carbon	8		mg C/L	1	5
7/16/2007 11:10	Effluent	Nutrients	Total-P	0.14		mg P/L	0.02	0.06
7/16/2007 11:10	Effluent	Nutrients	TSS	4	U	mg/L	4	16
7/16/2007 11:10	Effluent	Overflow	Alpha, Total	1.7	U	pCi/L		
7/16/2007 11:10	Effluent	Overflow	Alpha-Counting Error	1.1		pCi/L		
7/16/2007 11:10	Effluent	Overflow	Radium 226	0.5		pCi/L		
7/16/2007 11:10	Effluent	Overflow	Radium 226-Counting Error	0.1		pCi/L		
7/16/2007 11:10	Effluent	Overflow	Radium 228	1	U	pCi/L		
7/16/2007 11:10	Effluent	Overflow	Radium 228-Counting Error	0.7		pCi/L		
7/16/2007 11:10	Effluent	Pesticides	Dinoseb	0.2	UJ	ug/L	0.2	0.6
7/16/2007 11:10	Effluent	Pesticides	Picloram	0.2	UJ	ug/L	0.2	0.6
7/16/2007 11:10	Effluent	Pesticides	Silvex	0.2	UJ	ug/L	0.2	0.6
7/16/2007 11:10	Effluent	Pesticides	Carbofuran	0.2	U	ug/L	0.2	0.8
7/16/2007 11:10	Effluent	Pesticides	Oxamyl	0.2	U	ug/L	0.2	0.8
7/16/2007 11:10	Effluent	Pesticides	1,2-Dibromoethane	0.01	U	ug/L	0.01	0.04
7/16/2007 11:10	Effluent	Pesticides	Glyphosate	20	U	ug/L	20	60
7/16/2007 11:10	Effluent	Pesticides	Diquat	1	UJ	ug/L	1	5
7/16/2007 11:10	Effluent	Pesticides	Alachlor	0.6	U	ug/L	0.6	2.4
7/16/2007 11:10	Effluent	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2
7/16/2007 11:10	Effluent	Pesticides	Atrazine	0.05	U	ug/L	0.05	0.2
7/16/2007 11:10	Effluent	Pesticides	Azinphos Methyl	0.2	U	ug/L	0.2	0.8
7/16/2007 11:10	Effluent	Pesticides	Bromacil	0.2	U	ug/L	0.2	0.8
7/16/2007 11:10	Effluent	Pesticides	Butylate	0.2	U	ug/L	0.2	0.8
7/16/2007 11:10	Effluent	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2
7/16/2007 11:10	Effluent	Pesticides	Chlorpyrifos Methyl	0.1	U	ug/L	0.1	0.4
7/16/2007 11:10	Effluent	Pesticides	Diazinon	0.05	UJ	ug/L	0.05	0.2
7/16/2007 11:10	Effluent	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
7/16/2007 11:10	Effluent	Pesticides	Ethoprop	0.1	U	ug/L	0.1	0.4
7/16/2007 11:10	Effluent	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/16/2007 11:10	Effluent	Pesticides	Fonofos	0.1	U	ug/L	0.1	0.4
7/16/2007 11:10	Effluent	Pesticides	Hexazinone	0.1	U	ug/L	0.1	0.4
7/16/2007 11:10	Effluent	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
7/16/2007 11:10	Effluent	Pesticides	Metalaxyl	0.25	UJ	ug/L	0.25	1
7/16/2007 11:10	Effluent	Pesticides	Metolachlor	0.5	U	ug/L	0.5	2
7/16/2007 11:10	Effluent	Pesticides	Metribuzin	0.1	U	ug/L	0.1	0.4
7/16/2007 11:10	Effluent	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.8
7/16/2007 11:10	Effluent	Pesticides	Naled	0.8	UJ	ug/L	0.8	3.2
7/16/2007 11:10	Effluent	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
7/16/2007 11:10	Effluent	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
7/16/2007 11:10	Effluent	Pesticides	Parathion Methyl	0.1	U	ug/L	0.1	0.4
7/16/2007 11:10	Effluent	Pesticides	Phorate	0.05	U	ug/L	0.05	0.2
7/16/2007 11:10	Effluent	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6
7/16/2007 11:10	Effluent	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
7/16/2007 11:10	Effluent	Pesticides	Chlordane	0.2	U	ug/L	0.2	0.8
7/16/2007 11:10	Effluent	Pesticides	PCB-1016	0.2	U	ug/L	0.2	0.8
7/16/2007 11:10	Effluent	Pesticides	PCB-1221	0.2	U	ug/L	0.2	0.8
7/16/2007 11:10	Effluent	Pesticides	PCB-1232	0.2	U	ug/L	0.2	0.8
7/16/2007 11:10	Effluent	Pesticides	PCB-1242	0.3	U	ug/L	0.3	1.2
7/16/2007 11:10	Effluent	Pesticides	PCB-1248	0.2	U	ug/L	0.2	0.8
7/16/2007 11:10	Effluent	Pesticides	PCB-1254	0.3	U	ug/L	0.3	1.2
7/16/2007 11:10	Effluent	Pesticides	PCB-1260	0.2	U	ug/L	0.2	0.8
7/16/2007 11:10	Effluent	Pesticides	Toxaphene	0.75	U	ug/L	0.75	3
7/16/2007 11:10	Effluent	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	1,2-Dichlorobenzene	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	1,3-Dichlorobenzene	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	1,4-Dichlorobenzene	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	2,4-Dichlorophenol	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	2,4-Dimethylphenol	9.5	U	ug/L	9.5	38
7/16/2007 11:10	Effluent	Priority Organic Pollutants	2,4-Dinitrophenol	14	U	ug/L	14	57
7/16/2007 11:10	Effluent	Priority Organic Pollutants	2,4-Dinitrotoluene	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	2,6-Dinitrotoluene	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	2-Chloronaphthalene	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	2-Chlorophenol	0.95	U	ug/L	0.95	3.8

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/16/2007 11:10	Effluent	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9	U	ug/L	2.9	11
7/16/2007 11:10	Effluent	Priority Organic Pollutants	2-Nitrophenol	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38	U	ug/L	38	150
7/16/2007 11:10	Effluent	Priority Organic Pollutants	4,4'-DDD	1.4	U	ug/L	1.4	5.7
7/16/2007 11:10	Effluent	Priority Organic Pollutants	4,4'-DDE	1.4	U	ug/L	1.4	5.7
7/16/2007 11:10	Effluent	Priority Organic Pollutants	4,4'-DDT	1.4	U	ug/L	1.4	5.7
7/16/2007 11:10	Effluent	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	U	ug/L	1.9	7.6
7/16/2007 11:10	Effluent	Priority Organic Pollutants	4-Nitrophenol	14	U	ug/L	14	57
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Acenaphthene	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Acenaphthylene	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Aldrin	1.4	U	ug/L	1.4	5.7
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Anthracene	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Benzidine	95	UJ	ug/L	95	380
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Benzo(a)anthracene	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Benzo(a)pyrene	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Benzo(b)fluoranthene	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Benzo(k)fluoranthene	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9	U	ug/L	2.9	11
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	14	U	ug/L	14	57
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Butyl benzyl phthalate	4.8	U	ug/L	4.8	19
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Chrysene	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Di-n-butyl phthalate	4.8	U	ug/L	4.8	19
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Di-n-octyl phthalate	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Dieldrin	1.4	U	ug/L	1.4	5.7
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Diethyl phthalate	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Dimethyl phthalate	48	U	ug/L	48	190
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Endosulfan I	3.8	U	ug/L	3.8	15
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Endosulfan II	3.8	U	ug/L	3.8	15
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Endosulfan sulfate	1.4	U	ug/L	1.4	5.7

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Endrin	1.4	U	ug/L	1.4	5.7
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Endrin aldehyde	3.8	U	ug/L	3.8	15
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Fluoranthene	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Fluorene	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Heptachlor	1.4	U	ug/L	1.4	5.7
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Heptachlor epoxide	1.4	U	ug/L	1.4	5.7
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Hexachlorobenzene	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Hexachlorobutadiene	2.9	U	ug/L	2.9	11
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9	U	ug/L	2.9	11
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Hexachloroethane	2.9	U	ug/L	2.9	11
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Isophorone	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	U	ug/L	1.9	7.6
7/16/2007 11:10	Effluent	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	U	ug/L	1.9	7.6
7/16/2007 11:10	Effluent	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9	U	ug/L	2.9	11
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Naphthalene	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Nitrobenzene	1.9	U	ug/L	1.9	7.6
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Pentachlorophenol	2.9	U	ug/L	2.9	11
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Phenanthrene	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Phenol	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Pyrene	0.95	U	ug/L	0.95	3.8
7/16/2007 11:10	Effluent	Priority Organic Pollutants	alpha-BHC	1.4	U	ug/L	1.4	5.7
7/16/2007 11:10	Effluent	Priority Organic Pollutants	beta-BHC	1.4	U	ug/L	1.4	5.7
7/16/2007 11:10	Effluent	Priority Organic Pollutants	delta-BHC	1.4	U	ug/L	1.4	5.7
7/16/2007 11:10	Effluent	Priority Organic Pollutants	gamma-BHC	1.4	U	ug/L	1.4	5.7
7/16/2007 11:10	Effluent	Priority Organic Pollutants	1,1,2-Trichloroethane	0.2	U	ug/L	0.2	1
7/16/2007 11:10	Effluent	Priority Organic Pollutants	1,1-Dichloroethene	0.5	U	ug/L	0.5	2
7/16/2007 11:10	Effluent	Priority Organic Pollutants	1,2-Dichloroethane	0.2	U	ug/L	0.2	1
7/16/2007 11:10	Effluent	Priority Organic Pollutants	1,2-Dichloropropane	0.2	U	ug/L	0.2	1
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Benzene	0.5	U	ug/L	0.5	1
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Bromodichloromethane	6.3		ug/L	0.2	1
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Bromoform	0.55	I	ug/L	0.5	2
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Carbon tetrachloride	0.2	U	ug/L	0.2	1
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Chlorobenzene	0.2	U	ug/L	0.2	1
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Chloroform	7.5		ug/L	0.2	1

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Dibromochloromethane	3.6		ug/L	0.2	1
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Ethylbenzene	0.5	U	ug/L	0.5	2
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Styrene	0.5	U	ug/L	0.5	2
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Tetrachloroethene	0.5	U	ug/L	0.5	2
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Toluene	0.5	U	ug/L	0.5	2
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Trichloroethene	0.2	U	ug/L	0.2	1
7/16/2007 11:10	Effluent	Priority Organic Pollutants	Vinyl chloride	0.5	U	ug/L	0.5	2
7/16/2007 11:10	Effluent	Priority Organic Pollutants	cis-1,2-Dichloroethene	0.5	U	ug/L	0.5	2
7/16/2007 11:10	Effluent	Priority Organic Pollutants	trans-1,2-Dichloroethene	0.5	U	ug/L	0.5	2
7/16/2007 11:10	Effluent	Nutrients	Sample Depth	0.01		m		
7/16/2007 11:10	Effluent	Nutrients	Specific Conductance	1212		umhos/cm		
7/16/2007 11:10	Effluent	Nutrients	Temperature	31.02		C		
7/16/2007 11:10	Effluent	Nutrients	pH	6.4				
7/16/2007 11:45	Blank	Metals	Mercury	0.12	U	ug/L	0.12	0.5
7/16/2007 11:45	Blank	Metals	Aluminum	5	U	ug/L	5	20
7/16/2007 11:45	Blank	Metals	Barium	0.3	U	ug/L	0.3	1.2
7/16/2007 11:45	Blank	Metals	Calcium	0.02	U	mg/L	0.02	0.08
7/16/2007 11:45	Blank	Metals	Iron	5	U	ug/L	5	20
7/16/2007 11:45	Blank	Metals	Magnesium	0.005	U	mg/L	0.005	0.02
7/16/2007 11:45	Blank	Metals	Manganese	0.1	U	ug/L	0.1	0.4
7/16/2007 11:45	Blank	Metals	Sodium	0.75	U	mg/L	0.75	3
7/16/2007 11:45	Blank	Metals	Zinc	5	U	ug/L	5	20
7/16/2007 11:45	Blank	Metals	Antimony	0.5	U	ug/L	0.5	2
7/16/2007 11:45	Blank	Metals	Arsenic	0.5	U	ug/L	0.5	2
7/16/2007 11:45	Blank	Metals	Beryllium	0.025	U	ug/L	0.025	0.1
7/16/2007 11:45	Blank	Metals	Cadmium	0.043	IV	ug/L	0.02	0.08
7/16/2007 11:45	Blank	Metals	Chromium	1	U	ug/L	1	4
7/16/2007 11:45	Blank	Metals	Copper	0.25	U	ug/L	0.25	1
7/16/2007 11:45	Blank	Metals	Lead	0.32	IV	ug/L	0.2	0.8
7/16/2007 11:45	Blank	Metals	Nickel	0.25	U	ug/L	0.25	1
7/16/2007 11:45	Blank	Metals	Selenium	0.5	U	ug/L	0.5	2
7/16/2007 11:45	Blank	Metals	Silver	0.025	U	ug/L	0.025	0.1
7/16/2007 11:45	Blank	Metals	Thallium	0.1	U	ug/L	0.1	0.4
7/16/2007 11:45	Blank	Nutrients	Chloride	0.2	U	mg Cl/L	0.2	0.5
7/16/2007 11:45	Blank	Nutrients	Cyanide	0.005	U	mg CN/L	0.005	0.02

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/16/2007 11:45	Blank	Nutrients	Fluoride	0.05	U	mg F/L	0.05	0.1
7/16/2007 11:45	Blank	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
7/16/2007 11:45	Blank	Nutrients	NO2NO3-N	0.004	U	mg N/L	0.004	0.01
7/16/2007 11:45	Blank	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
7/16/2007 11:45	Blank	Nutrients	Sulfate	0.2	U	mg SO4/L	0.2	0.5
7/16/2007 11:45	Blank	Nutrients	Sulfide	0.05	U	mg S/L	0.05	0.2
7/16/2007 11:45	Blank	Nutrients	Kjeldahl Nitrogen	0.08	U	mg N/L	0.08	0.2
7/16/2007 11:45	Blank	Nutrients	Organic Carbon	1	U	mg C/L	1	5
7/16/2007 11:45	Blank	Nutrients	Total-P	0.02	U	mg P/L	0.02	0.06
7/16/2007 11:45	Blank	Overflow	Alpha, Total	0.8	U	pCi/L		
7/16/2007 11:45	Blank	Overflow	Alpha-Counting Error	0.5		pCi/L		
7/16/2007 11:45	Blank	Overflow	Radium 226	0.2	U	pCi/L		
7/16/2007 11:45	Blank	Overflow	Radium 226-Counting Error	0.1		pCi/L		
7/16/2007 11:45	Blank	Overflow	Radium 228	0.9	U	pCi/L		
7/16/2007 11:45	Blank	Overflow	Radium 228-Counting Error	0.5		pCi/L		
7/16/2007 11:45	Blank	Pesticides	Dinoseb	0.2	U	ug/L	0.2	0.6
7/16/2007 11:45	Blank	Pesticides	Picloram	0.2	UJ	ug/L	0.2	0.6
7/16/2007 11:45	Blank	Pesticides	Silvex	0.2	U	ug/L	0.2	0.6
7/16/2007 11:45	Blank	Pesticides	Carbofuran	0.2	U	ug/L	0.2	0.8
7/16/2007 11:45	Blank	Pesticides	Oxamyl	0.2	U	ug/L	0.2	0.8
7/16/2007 11:45	Blank	Pesticides	1,2-Dibromoethane	0.01	U	ug/L	0.01	0.04
7/16/2007 11:45	Blank	Pesticides	Glyphosate	20	U	ug/L	20	60
7/16/2007 11:45	Blank	Pesticides	Diquat	1	UJ	ug/L	1	5
7/16/2007 11:45	Blank	Pesticides	Alachlor	0.57	U	ug/L	0.57	2.3
7/16/2007 11:45	Blank	Pesticides	Ametryn	0.048	U	ug/L	0.048	0.19
7/16/2007 11:45	Blank	Pesticides	Atrazine	0.048	U	ug/L	0.048	0.19
7/16/2007 11:45	Blank	Pesticides	Azinphos Methyl	0.19	U	ug/L	0.19	0.76
7/16/2007 11:45	Blank	Pesticides	Bromacil	0.19	U	ug/L	0.19	0.76
7/16/2007 11:45	Blank	Pesticides	Butylate	0.19	U	ug/L	0.19	0.76
7/16/2007 11:45	Blank	Pesticides	Chlorpyrifos Ethyl	0.048	U	ug/L	0.048	0.19
7/16/2007 11:45	Blank	Pesticides	Chlorpyrifos Methyl	0.095	U	ug/L	0.095	0.38
7/16/2007 11:45	Blank	Pesticides	Diazinon	0.048	UJ	ug/L	0.048	0.19
7/16/2007 11:45	Blank	Pesticides	Ethion	0.048	U	ug/L	0.048	0.19
7/16/2007 11:45	Blank	Pesticides	Ethoprop	0.095	U	ug/L	0.095	0.38
7/16/2007 11:45	Blank	Pesticides	Fenamiphos	0.19	U	ug/L	0.19	0.76

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/16/2007 11:45	Blank	Pesticides	Fonofos	0.095	U	ug/L	0.095	0.38
7/16/2007 11:45	Blank	Pesticides	Hexazinone	0.095	U	ug/L	0.095	0.38
7/16/2007 11:45	Blank	Pesticides	Malathion	0.14	U	ug/L	0.14	0.56
7/16/2007 11:45	Blank	Pesticides	Metalaxyl	0.24	UJ	ug/L	0.24	0.96
7/16/2007 11:45	Blank	Pesticides	Metolachlor	0.48	U	ug/L	0.48	1.9
7/16/2007 11:45	Blank	Pesticides	Metribuzin	0.095	U	ug/L	0.095	0.38
7/16/2007 11:45	Blank	Pesticides	Mevinphos	0.19	U	ug/L	0.19	0.76
7/16/2007 11:45	Blank	Pesticides	Naled	0.76	UJ	ug/L	0.76	3
7/16/2007 11:45	Blank	Pesticides	Norflurazon	0.14	U	ug/L	0.14	0.56
7/16/2007 11:45	Blank	Pesticides	Parathion Ethyl	0.14	U	ug/L	0.14	0.56
7/16/2007 11:45	Blank	Pesticides	Parathion Methyl	0.095	U	ug/L	0.095	0.38
7/16/2007 11:45	Blank	Pesticides	Phorate	0.048	U	ug/L	0.048	0.19
7/16/2007 11:45	Blank	Pesticides	Prometryn	0.14	U	ug/L	0.14	0.56
7/16/2007 11:45	Blank	Pesticides	Simazine	0.048	U	ug/L	0.048	0.19
7/16/2007 11:45	Blank	Pesticides	Chlordane	0.19	U	ug/L	0.19	0.76
7/16/2007 11:45	Blank	Pesticides	PCB-1016	0.19	U	ug/L	0.19	0.76
7/16/2007 11:45	Blank	Pesticides	PCB-1221	0.19	U	ug/L	0.19	0.76
7/16/2007 11:45	Blank	Pesticides	PCB-1232	0.19	U	ug/L	0.19	0.76
7/16/2007 11:45	Blank	Pesticides	PCB-1242	0.29	U	ug/L	0.29	1.2
7/16/2007 11:45	Blank	Pesticides	PCB-1248	0.19	U	ug/L	0.19	0.76
7/16/2007 11:45	Blank	Pesticides	PCB-1254	0.29	U	ug/L	0.29	1.2
7/16/2007 11:45	Blank	Pesticides	PCB-1260	0.19	U	ug/L	0.19	0.76
7/16/2007 11:45	Blank	Pesticides	Toxaphene	0.71	U	ug/L	0.71	2.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	1,2-Dichlorobenzene	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	1,3-Dichlorobenzene	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	1,4-Dichlorobenzene	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	2,4-Dichlorophenol	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	2,4-Dimethylphenol	9.6	U	ug/L	9.6	38
7/16/2007 11:45	Blank	Priority Organic Pollutants	2,4-Dinitrophenol	14	U	ug/L	14	58
7/16/2007 11:45	Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	2-Chloronaphthalene	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	2-Chlorophenol	0.96	U	ug/L	0.96	3.8

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/16/2007 11:45	Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9	U	ug/L	2.9	12
7/16/2007 11:45	Blank	Priority Organic Pollutants	2-Nitrophenol	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38	U	ug/L	38	150
7/16/2007 11:45	Blank	Priority Organic Pollutants	4,4'-DDD	1.4	U	ug/L	1.4	5.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	4,4'-DDE	1.4	U	ug/L	1.4	5.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	4,4'-DDT	1.4	U	ug/L	1.4	5.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	U	ug/L	1.9	7.7
7/16/2007 11:45	Blank	Priority Organic Pollutants	4-Nitrophenol	14	U	ug/L	14	58
7/16/2007 11:45	Blank	Priority Organic Pollutants	Acenaphthene	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Acenaphthylene	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Aldrin	1.4	U	ug/L	1.4	5.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Anthracene	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Benzidine	96	UJ	ug/L	96	380
7/16/2007 11:45	Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9	U	ug/L	2.9	12
7/16/2007 11:45	Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	14	U	ug/L	14	58
7/16/2007 11:45	Blank	Priority Organic Pollutants	Butyl benzyl phthalate	4.8	U	ug/L	4.8	19
7/16/2007 11:45	Blank	Priority Organic Pollutants	Chrysene	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Di-n-butyl phthalate	4.8	U	ug/L	4.8	19
7/16/2007 11:45	Blank	Priority Organic Pollutants	Di-n-octyl phthalate	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Dieldrin	1.4	U	ug/L	1.4	5.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Diethyl phthalate	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Dimethyl phthalate	48	U	ug/L	48	190
7/16/2007 11:45	Blank	Priority Organic Pollutants	Endosulfan I	3.8	U	ug/L	3.8	15
7/16/2007 11:45	Blank	Priority Organic Pollutants	Endosulfan II	3.8	U	ug/L	3.8	15
7/16/2007 11:45	Blank	Priority Organic Pollutants	Endosulfan sulfate	1.4	U	ug/L	1.4	5.8

Appendix E. (continued)

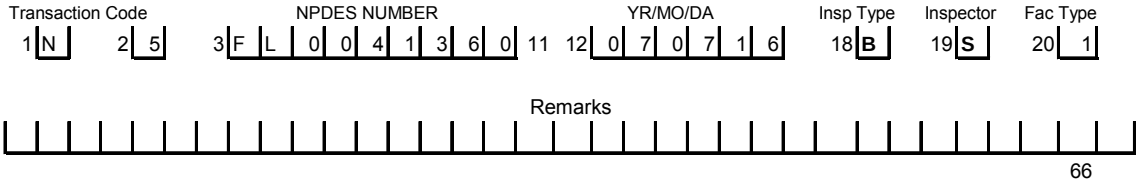
Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/16/2007 11:45	Blank	Priority Organic Pollutants	Endrin	1.4	U	ug/L	1.4	5.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Endrin aldehyde	3.8	U	ug/L	3.8	15
7/16/2007 11:45	Blank	Priority Organic Pollutants	Fluoranthene	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Fluorene	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Heptachlor	1.4	U	ug/L	1.4	5.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Heptachlor epoxide	1.4	U	ug/L	1.4	5.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Hexachlorobenzene	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Hexachlorobutadiene	2.9	U	ug/L	2.9	12
7/16/2007 11:45	Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9	U	ug/L	2.9	12
7/16/2007 11:45	Blank	Priority Organic Pollutants	Hexachloroethane	2.9	U	ug/L	2.9	12
7/16/2007 11:45	Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Isophorone	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	U	ug/L	1.9	7.7
7/16/2007 11:45	Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	U	ug/L	1.9	7.7
7/16/2007 11:45	Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9	U	ug/L	2.9	12
7/16/2007 11:45	Blank	Priority Organic Pollutants	Naphthalene	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Nitrobenzene	1.9	U	ug/L	1.9	7.7
7/16/2007 11:45	Blank	Priority Organic Pollutants	Pentachlorophenol	2.9	U	ug/L	2.9	12
7/16/2007 11:45	Blank	Priority Organic Pollutants	Phenanthrene	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Phenol	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	Pyrene	0.96	U	ug/L	0.96	3.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	alpha-BHC	1.4	U	ug/L	1.4	5.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	beta-BHC	1.4	U	ug/L	1.4	5.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	delta-BHC	1.4	U	ug/L	1.4	5.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	gamma-BHC	1.4	U	ug/L	1.4	5.8
7/16/2007 11:45	Blank	Priority Organic Pollutants	1,1,2-Trichloroethane	0.2	U	ug/L	0.2	1
7/16/2007 11:45	Blank	Priority Organic Pollutants	1,1-Dichloroethene	0.5	U	ug/L	0.5	2
7/16/2007 11:45	Blank	Priority Organic Pollutants	1,2-Dichloroethane	0.2	U	ug/L	0.2	1
7/16/2007 11:45	Blank	Priority Organic Pollutants	1,2-Dichloropropane	0.2	U	ug/L	0.2	1
7/16/2007 11:45	Blank	Priority Organic Pollutants	Benzene	0.5	U	ug/L	0.5	1
7/16/2007 11:45	Blank	Priority Organic Pollutants	Bromodichloromethane	0.2	U	ug/L	0.2	1
7/16/2007 11:45	Blank	Priority Organic Pollutants	Bromoform	0.5	U	ug/L	0.5	2
7/16/2007 11:45	Blank	Priority Organic Pollutants	Carbon tetrachloride	0.2	U	ug/L	0.2	1
7/16/2007 11:45	Blank	Priority Organic Pollutants	Chlorobenzene	0.2	U	ug/L	0.2	1
7/16/2007 11:45	Blank	Priority Organic Pollutants	Chloroform	0.2	U	ug/L	0.2	1

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/16/2007 11:45	Blank	Priority Organic Pollutants	Dibromochloromethane	0.2	U	ug/L	0.2	1
7/16/2007 11:45	Blank	Priority Organic Pollutants	Ethylbenzene	0.5	U	ug/L	0.5	2
7/16/2007 11:45	Blank	Priority Organic Pollutants	Styrene	0.5	U	ug/L	0.5	2
7/16/2007 11:45	Blank	Priority Organic Pollutants	Tetrachloroethene	0.5	U	ug/L	0.5	2
7/16/2007 11:45	Blank	Priority Organic Pollutants	Toluene	0.5	U	ug/L	0.5	2
7/16/2007 11:45	Blank	Priority Organic Pollutants	Trichloroethene	0.2	U	ug/L	0.2	1
7/16/2007 11:45	Blank	Priority Organic Pollutants	Vinyl chloride	0.5	U	ug/L	0.5	2
7/16/2007 11:45	Blank	Priority Organic Pollutants	cis-1,2-Dichloroethene	0.5	U	ug/L	0.5	2
7/16/2007 11:45	Blank	Priority Organic Pollutants	trans-1,2-Dichloroethene	0.5	U	ug/L	0.5	2

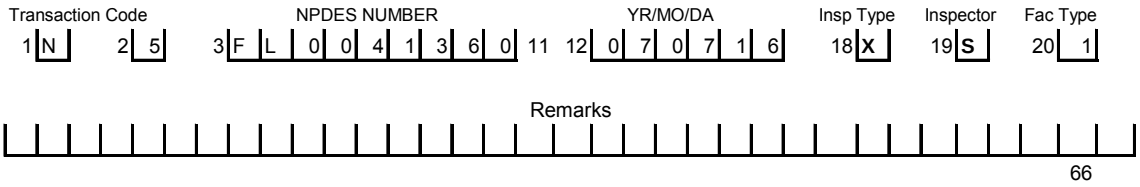
The Bioassay of East Central Regional Wastewater Treatment Facility effluent sampled on July 16, 2007. NPDES #FL0041360.

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



The Priority Pollutants Analysis of East Central Regional Wastewater Treatment Facility effluent sampled on July 16, 2007. NPDES #FL0041360.

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



Biological Analyses of East Central Regional Wastewater Treatment Facility effluent sampled on July 16, 2007. NPDES #FL0041360.

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

