

Effluent Quality Assessment

Kings Gate Club, Inc., Reverse Osmosis Water Treatment Plant

Sarasota County

NPDES #FL0188859

Sampled August 29, 2011

November 2011

Biology Section
Bureau of Laboratories
Division of Environmental Assessment and Restoration

Quality Manual No. 870346G
NELAC Certification No. E31780

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Kings Gate Club, Inc., Reverse Osmosis (RO) Water Treatment Plant (WTP), 290 Avenue of Kings, Nokomis, Sarasota County, Florida, 34275. NPDES #FL0188859. Effluent grab samples for biological and chemical analyses for this facility were collected on August 29, 2011.

Introduction

Kings Gate Club, Inc., RO WTP is a reverse osmosis water treatment plant which provides potable water to the residents of Kings Gate Mobile Home Park. (See Appendix F for detailed facility information provided by Pete Wenner of FDEP Southwest District.)

Methods

Samples were collected from the EFF-1 NPDES sampling point for Outfall D-001 by Jason Cohen and Pete Wenner (FDEP Southwest District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling. All DEP SOPs are available on the web at: http://www.floridadep.org/labs/bars/sas/sop/index.htm.

See Appendix A for the completed chain of custody form.

The 96-hour acute definitive toxicity tests were performed following internal DEP SOPs TA07_01 and TA07_02. All internal DEP SOPs are available on the web at: http://www.floridadep.org/labs/cgi-bin/sop/biosop.asp.

Results and Discussion

- **Toxicity Test Results**
  Tests were performed August 30 - September 3, 2011.

  Ceriodaphnia dubia 96-hour acute definitive bioassay – LC_{50} > 100%, 0%* mortality in 100% sample at 96 hours

  Cyprinella leedsi 96-hour acute definitive bioassay – LC_{50} > 100%, 15%* mortality in 100% sample at 96 hours

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

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

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

- **Chemistry Results**
  Total residual chlorine and total ammonia were not detected in the bioassay sample in the laboratory. The total ammonia concentration in the composite sample collected and preserved for chemical analysis was 0.018 I mg N/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was < 0.02 mg/L.

  The effluent's copper (5.37 µg/L) exceeded the Class III marine criterion (62-302.530(23) F.A.C.). Aluminum, arsenic, fluoride, total alpha and combined radium 226 and radium 228 were detected in the effluent at levels that comply with Class III marine water quality criteria (62-302.530, F.A.C.). Atrazine,

iron, and nickel were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL).

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

Conclusion

The effluent samples collected from the EFF-1 NPDES sampling point for Outfall D-001 for this facility on August 29, 2011, were not acutely toxic to either test species during the 96-hour acute definitive bioassays. The effluent copper concentration exceeded the Class III marine water quality criterion for copper. Additional effluent water quality samples did not exceed Class III marine criteria or permitted limits.

Table 1. Effluent limits, Class III Criteria for predominantly marine waters, chemical data, and qualifiers for samples collected from the Kings Gate Club outfall on August 29, 2011.

Kings Gate Club, Inc. RO WTP NPDES# FL0188859	Class III Criteria	Effluent Limits	D-001	
Organic Constituents (µg/L)				
Atrazine	-	-	0.066	I
Metals (µg/L unless otherwise noted)				
Aluminum	≤ 1500	-	21	
Arsenic	≤ 50	-	3.59	
Cadmium	≤ 8.8	-	0.05	U
Calcium (mg/L)	-	-	67.7	
Chromium-III	-	-	0.59	I
Copper	≤ 3.7	-	5.37	
Iron	≤ 300	-	82	I
Lead	≤ 8.5	-	0.2	U
Magnesium (mg/L)	-	-	21.1	
Nickel	≤ 8.3	-	0.3	I
Selenium	≤ 71	-	0.2	U
Silver	≤ 2.3	-	0.025	U
Zinc	≤ 86	-	5	U
Nutrients (mg/L)				
Ortho-phosphate	-	-	0.055	
Total Phosphorus	-	-	0.11	
Total Ammonia	-	-	0.018	I
Un-ionized Ammonia	-	-	< 0.02	c
Nitrate and Nitrite	-	-	0.016	
Total Kjeldahl Nitrogen	-	-	0.97	
Organic Nitrogen	-	-	0.952	c
Total Nitrogen	-	-	0.986	c
General Physical and Chemical Parameters				
Dissolved Oxygen (mg/L)	≥ 4.0	≥ 4.0 s	7.1	
pH (SU)	6.5 - 8.5	6.5 - 8.5	8.0	
Conductivity (µmhos/cm)	-	-	5831	
Temperature (°C)	-	-	31.7	
Salinity	-	-	2.7	c
Total Residual Chlorine (mg/L)	≤ 0.01	-	0.03	UQ£
Chlorophyll *a* (µg/L) - Corrected	-	-	16	
Phaeophytin (µg/L)	-	-	4.8	
Total Suspended Solids (mg/L)	-	-	9	I
CBOD, 5 day (mg/L), N - inhibited	-	-	28	V
Fluoride (mg/L)	≤ 5.0	≤ 5.0 s	0.42	
Alpha, Total (pCi/L)	≤ 15	≤ 15 s	3.5	
Alpha-Counting Error (pCi/L)	-	-	1.4	
Radium 226 (pCi/L)	-	-	0.6	
Radium 226-Counting Error (pCi/L)	-	-	0.1	
Radium 228 (pCi/L)	-	-	1	U
Radium 228-Counting Error (pCi/L)	-	-	0.6	
Radium 226 + 228 (pCi/L)	≤ 5	≤ 5 s	0.6	c
Flow (MGD)	-	0.01 a	0.0075	a*
Hardness (mg $CaCO_3$)	-	-	255.94	c

Value exceeds the Class III Water Quality Criteria or permit limits

a - Annual average
c - Value is calculated
s - Single sample
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
Q - Sample held beyond normal holding time
U - Material analyzed for but not detected; value reported is the method detection limit
V - Analyte was detected in both sample and method blank
£ - measurement taken in the FDEP laboratory
* - Monitored from 07/2010 - 06/2011

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2011-08-29-31
FYI3 Sampling Inspection for Kings Gate Club, Inc , RO

Requester: Edward Smith
Field Report Prepared By:

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

Collected By: P. WENNER, J. POWELL
Send Final Report To: Joe Squiteri/ Michele Duggan/
Sampling Agency: FDEP SWD

Lab ID *	Location			Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	D-001	39151		☐ Comp ☑ Grab	Date 8/29/11 Time 1025 (Eastern) Central	Date Time Eastern Central	A
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L) 7.06	Stored Station Number			
	Matrix (include type e.g. Salt, Fresh, etc) FRESH	Temp (C) 31.7H	pH 7.95	Sample Depth ☑ m ☐ ft 0.1	☑ Salinity (PPTh) 0.2a1 ☑ Sp Conductance (umho/cm) 583J	NPDES Number	
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		Comments J: Sp Cond Failed CCV			
Lab ID *	Location			☐ Comp ☑ Grab	Collection (begin) Date Time (Eastern) Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	BLANK	39152		Date 8/29/11 Time 1100			B
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Stored Station Number			
	Matrix (include type e.g. Salt, Fresh, etc) LAB DI H_2O		pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number	
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		Comments			
Lab ID *	Location			☐ Comp ☐ Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Stored Station Number			
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number	
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		Comments			
Lab ID *	Location			☐ Comp ☐ Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Stored Station Number			
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number	
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		Comments 4 biomass Rec'd by Tox Dept. 10:24 8.30.11			

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
	8/29/11 1500	FED Ex					SK	8-30-11/10:00

* Shaded Areas for Lab use only.
** Please see reverse side for Bottle Group information.

last revised October 1, 2003

FDEP Biology Laboratory - Acute Bioassay Bench Sheets

Facility: Kings Gate RO

Address : ~~Castle Drive (between Combat Dr. & Dutch Rd)~~ 290 Avenue of Kings

City: Nokomis **County:** Sarasota 34275

Contact/District: Peter Wenner / Southwest

NPDES Permit #: FL 0188859

LIMS Job #: 14H-2011-08-30-03 **LIMS Sample #:** 1374119

Lims Data Entry: 9-7-11-MF Data Entry Verification: 9.7.11 KC

Sample Collection: Date: 8-29-11 Time: 1025

Hold Time Start: Date: 8-29-11 Time: 1025

Comments:

Initial sample handling:

Instructions: Check yes or no. If yes is checked, complete blanks

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:

Instructions: Check yes or no. Fill in temperatures.

Temperature: Shipped ≤ 6°C ☑ Yes ☐ No — IF Hand Delivered: Cooling ☐ Yes ☐ No (received ____°C collected ____°C)

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

Investigators' Signatures:	Initials:
Marshall Faircloth	MF
KAYA-CLAYTON	KC
Jessica Daniel	JD
Brad Alexander	BA
REVIEWER: Lisa Miller 2m	

Diluent/Control Batch#:	8.18.11	8.29.11							
Water Quality Parameters	20% DMW	Well Water	Moderately Hard Water	Salt Water ASW NSW Test 1	Salt Water ASW NSW Test 2	Other: DMW #8.20.11	Original Sample	Measured by	Verified by
Field Total Residual Cl_2 (mg/L):	N/A	N/A	N/A	N/A	N/A	N/A	not measured	n/a	KC
Lab Total Residual Cl_2 (mg/L):	<0.03	<0.03				<0.03	<0.03	JD/KC	KC/MF
Alkalinity (mg/L as $CaCO_3$):	36	137				87	125	KC	KC/MF
Hardness (mg/L as $CaCO_3$):	85	136				91	242	KC	KC/MF
Total Ammonia (mg/L as N):	<0.017	<0.017				<0.017	<0.017	BA/MF	KC
Conductivity: ☑ µmhos ☐ mmhos	177	274				180	642	KC/JD/MF	KC/MF
Salinity (ppth):	—	—				—	—	—	—

V 1.8 1/13/10

Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample # 1374119 SOP#: TA 07 01 Test # 1 of 2

Test Species:
Batch #: 8-30-11 Age: < 24hr
- [x] *Ceriodaphnia dubia*
- [ ] *Cyprinella leedsi*
- [ ] *Pimephales promelas*
- [ ] *Menidia beryllina*
- [ ] *Americamysis bahia*
- [ ] Other:_____

Test Validation
Control Survival ≥ 90%: [x] Yes [ ] No
Temperature Range ≤ 3° C: [x] Yes [ ] No

Diluent (Batch # 8-19-11)
- [ ] ASW
- [x] 20% DMW
- [ ] MHW
- [ ] Well

Test Type: [x] Acute [x] Definitive
[ ] Static [x] Static Renewal [ ] Flow-Through

Test Duration:
- [ ] 48 hr
- [x] 96 hr
- [ ] ___hr

Test Started: Date 8-30-11 Time 1130

Test Ended: Date 9.3.11 Time 1200

Chamber Size 30 ml
Test Volume 20 ml

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
CTL	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
6.25%	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
12.5%	A	A	5	4D	4	4	4	4
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
25%	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
50%	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
100%	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5 KC	5	5	5	5
	D	D	5	5	5	5	5	5
Checked or Verified by:			KC	KC	KC	KC	KC	JD

Loaded/ Verified by: DFI KC
m = missing, d = dead, BR/AR Before/ After Renewal

Test Results:
Screening Tests: Report LC50 as >100%, =100%, or <100%.
% mortality in 100% sample: 0 LC50: >100%
Calculated LC50 (Definitive) 95% CI_____ Method_____

Food
- [x] YCT Batch# 5-5-11
- [x] P. subcapitata Batch# 5.5-11
- [ ] Artemia Lot#_____

Feeding and Artemia Batch #
- [x] 0 hr 5-5-11 KC [x] Prior to Test
- [ ] 24 hr___
- [x] 48 hr KC [ ] Prior to Renewal
- [ ] 72 hr___

Temperature Range (°C)
Incubator # 2
min. 25.5 max. 27.9 mean ___

Incubator #___
min.___ max.___ mean___

Waterbath #___
min.___ max.___ mean___

JD Room B246
min. 24.6 max. 24.6 mean ___
23.6

Light intensity (ft. candles): 50-100

Photoperiod (hours): 16 light, 8 dark

Comments: DMW#8.20.11 used for Renewal. -KC-

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

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Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample # 1374119 SOP#: TA 07 02 Test # 2 of 2

Test Species: Batch #: 8.30.11 Age: 12 days
- ☐ Ceriodaphnia dubia
- ☒ Cyprinella leedsi
- ☐ Pimephales promelas
- ☐ Menidia beryllina
- ☐ Americamysis bahia
- ☐ Other:

Test Validation
Control Survival ≥ 90%: ☑ Yes ☐ No
Temperature Range ≤ 3° C: ☑ Yes ☐ No

Diluent (Batch # 8.29.11)
☐ ASW ☐ 20% DMW ☐ MHW ☒ Well

Test Type: ☑ Acute ☑ Definitive ☐ Static ☑ Static Renewal ☐ Flow-Through

Test Duration: ☐ 48 hr ☑ 96 hr ☐ __hr

Test Started: Date 8.30.11 Time 1245

Test Ended: Date 9.3.11 Time 1200

Chamber Size 1000ml
Test Volume: 400ml

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
CTL	A	A1	10	9 JD	9	9	9	9
	B	A2	10	10	10	10	10	9 JD
6.25%	A	A3	10	8 JD	8	8	8	8
	B	A4	10	9 JD	9	9	9	9
12.5%	A	A5	10	10	10	10	10	10 JD
	B	A6	10	10	9 JD	9	9	9 JD
25%	A	A7	10	9 JD	9	9	9	9
	B	A8	10	10	10	10	10	10
50%	A	A9	10	10	10	10	8 JD	7 JD
	B	A10	10	10	10	10	8 JD	8
100%	A	A11	10	9 JD	9	9	8 JD	8
	B	A12	10	9 JD	9	9	9	9
Checked or Verified by:			JD	JD	JD	JD	JD	JD

Food
- ☐ YCT Batch#
- ☐ P. subcapitata Batch#
- ☑ Artemia Lot# 23613

Feeding and Artemia Batch #
- ☑ 0 hr 1521 ☑ Prior to Test
- ☐ 24 hr
- ☑ 48 hr 1541 ☑ Prior to Renewal
- ☐ 72 hr

Temperature Range (°C)
Incubator # 3 min. 24.6 max. 26.5 mean —
Incubator # min. max. mean
Waterbath # min. max. mean
JD Room B246 min. 24.6 max. 24.6 mean 23.6
Light Intensity (ft. candles): 50-100
Photoperiod (hours): 16 light, 8 dark

Loaded/ Verified by: KC / JD
m = missing, d = dead, BR/AR Before/ After Renewal

Test Results:
Screening Tests: Report LC50 as >100%, =100%, or <100%.
% mortality in 100% sample: 15 % LC50: >100 %
Calculated LC50 (Definitive) 95% CI_____ Method_____

Comments:

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

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Appendix B. (continued)

LIMS Sample # 1374119

FDEP Biology Laboratory - Bioassay Parameter Sheet

Test # 1 of 2

Test Species:

- ☑ *Ceriodaphnia dubia*
- ☐ *Cyprinella leedsi*
- ☐ *Pimephales promelas*
- ☐ *Menidia beryllina*
- ☐ *Americamysis bahia*
- ☐ Other:_____

Test aerated: (if DO is < 4.0 mg/L)

☐ Yes ☑ No

Concentration	Replicate	Test Hour	pH (SU)	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity ☑ µmhos ☐ mmhos	Salinity* (ppth)
CTL	M	0 hr	8.1	24.7	7.8	177	
		24 hr					
	A	48 hr BR	8.1	24.0	7.8	190	
	M	48 hr AR	8.0	24.6	7.7	180	
		72 hr					
	M	96 hr	8.1	24.5	8.4	181	
6.25%	M	0 hr	8.1	25.1	8.0	213	
		24 hr					
	A	48 hr BR	8.3	24.0	8.0	226	
	M	48 hr AR	8.0	24.6	7.7	210	
		72 hr					
	M	96 hr	8.1	24.4	8.4	227	
12.5%	M	0 hr	8.1	25.0	8.1	243	
		24 hr					
	A	48 hr BR	8.3	24.0	8.1	260	
	M	48 hr AR	8.1	24.4	7.6	239	
		72 hr					
	M	96 hr	8.2	24.3	8.5	260	
25%	M	0 hr	8.1	24.8	8.2	302	
		24 hr					
	A	48 hr BR	8.4	24.0	8.2	322	
	M	48 hr AR	8.1	24.2	7.6	298	
		72 hr					
	M	96 hr	8.2	24.1	8.7	330	
50%	M	0 hr	8.1	24.6	8.1	418	
		24 hr					
	A	48 hr BR	8.5	24.0	8.3	450	
	M	48 hr AR	8.1	24.0	7.7	413	
		72 hr					
	M	96 hr	8.3	24.0	8.7	467	
100%	M	0 hr	8.1	24.1	8.4	635	
		24 hr					
	A	48 hr BR	8.5	24.0	8.0	655	
	M	48 hr AR	8.1	24.0	8.7	639	
		72 hr					
	M	96 hr	8.3	24.5	8.5	647	
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					

*Measure/ record salinity for marine tests

Comments:

Measured By:
0 hr: MA
24 hr: —
48 hr BR: KC
48 hr AR: KC
72 hr: —
96 hr: JD

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Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Parameter Sheet

LIMS Sample # 1374119 Test # 2 of 2

Test Species:

☐ *Ceriodaphnia dubia* ☐ *Pimephales promelas* ☐ *Americamysis bahia*
☒ *Cyprinella leedsi* ☐ *Menidia beryllina* ☐ Other:_____

Test aerated: (if DO is < 4.0 mg/L)
☐ Yes ☑ No

Concentration	Replicate	Test Hour	pH (SU)	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity ☒ µmhos ☐ mmhos	Salinity* (ppth)
Ctrl	A	0 hr	7.6	24.0	7.3	274	
	B	24 hr	8.2	25.0	7.3	287	
	A	48 hr BR	8.3	24.8	7.3	297	
	A	48 hr AR	8.0	24.0	7.1	284	
	B	72 hr	7.9	24.9	6.3	291	
	A	96 hr	8.1	24.2	7.3	294	
6.25%	A	0 hr	7.8	24.1	7.6	291	
	B	24 hr	8.3	24.7	7.2	303	
	A	48 hr BR	8.3	25.1	7.3	315	
	A	48 hr AR	8.1	24.0	7.3	304	
	B	72 hr	8.0	24.9	5.4	312	
	A	96 hr	8.2	24.6	7.7	311	
12.5%	A	0 hr	7.9	24.2	8.0	319	
	B	24 hr	8.2	24.5	7.3	324	
	A	48 hr BR	8.3	25.1	7.3	333	
	A	48 hr AR	8.1	24.0	7.4	326	
	B	72 hr	8.0	24.9	5.6	334	
	A	96 hr	8.1	24.5	7.7	333	
25%	A	0 hr	7.9	24.2	8.1	367	
	B	24 hr	8.2	24.5	7.3	373	
	A	48 hr BR	8.3	25.0	7.4	386	
	A	48 hr AR	8.1	24.0	7.5	380	
	B	72 hr	8.0	25.2	5.9	393	
	A	96 hr	8.0	25.1	7.4	383	
50%	A	0 hr	8.0	24.4	8.4	450	
	B	24 hr	8.2	24.7	7.5	456	
	A	48 hr BR	8.3	25.0	7.4	468	
	A	48 hr AR	8.1	24.1	7.7	463	
	B	72 hr	8.0	24.5	6.2	JD 346	
	A	96 hr	8.1	25.7	7.3	468	
100%	A	0 hr	8.1	25.0	8.7	642	
	B	24 hr	8.2	24.5	7.5	644	
	A	48 hr BR	8.2	25.1	7.6	667	
	A	48 hr AR	8.1	25.7	8.6	673	
	B	72 hr	7.9	25.3	5.0	669	
	A	96 hr	8.1	25.2	7.6	669	
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					

*Measure/ record salinity for marine tests

Comments:

Measured By:
0 hr: JD
24 hr: JD
48 hr BR: JD
48 hr AR: JD
72 hr: JD
96 hr: JD

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V. 2.3 1-13-10

Appendix B. (continued)

Test ID: Kings Grade RO Dates: 8-30-11 - 9-3-11

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

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

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

entered by Kara Cop 9/4/11

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V 1.1 9/21/10 MF/jd

Appendix C. SRT Bench Sheets and Statistical Analysis

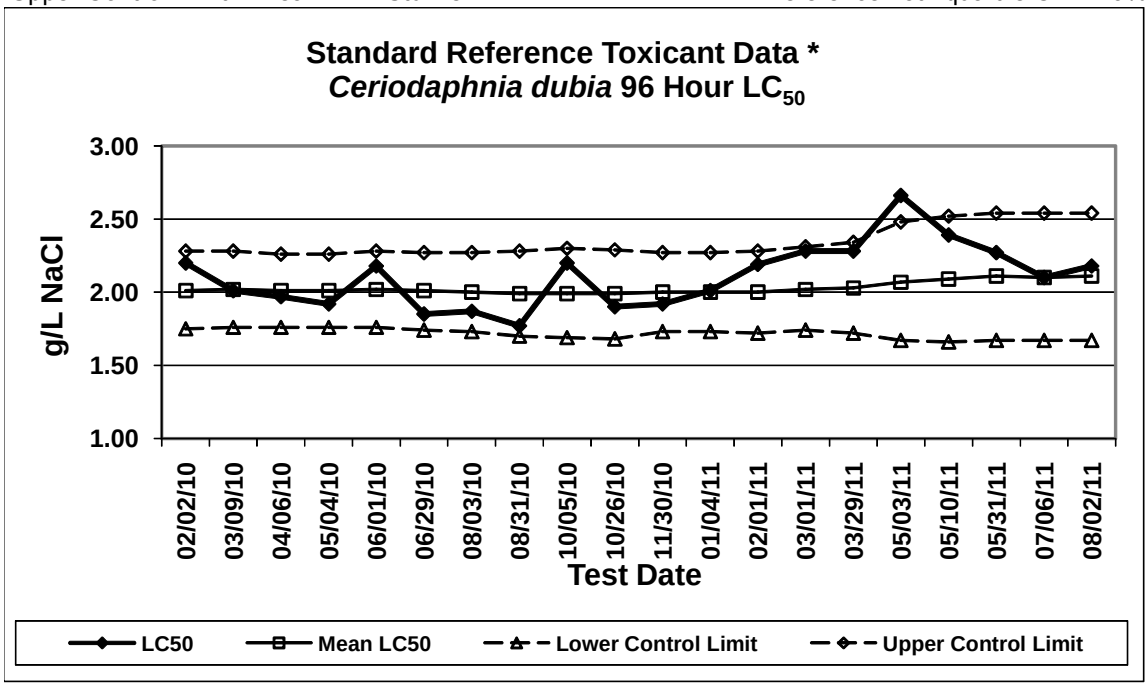
Florida Department of Environmental Protection
Bureau of Laboratories

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

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
02/02/10	2.20	2.01	0.13	1.75	2.28
03/09/10	2.01	2.02	0.13	1.76	2.28
04/06/10	1.97	2.01	0.12	1.76	2.26
05/04/10	1.92	2.01	0.12	1.76	2.26
06/01/10	2.18	2.02	0.13	1.76	2.28
06/29/10	1.85	2.01	0.13	1.74	2.27
08/03/10	1.87	2.00	0.14	1.73	2.27
08/31/10	1.77	1.99	0.14	1.70	2.28
10/05/10	2.20	1.99	0.15	1.69	2.30
10/26/10	1.90	1.99	0.15	1.68	2.29
11/30/10	1.92	2.00	0.14	1.73	2.27
01/04/11	2.01	2.00	0.14	1.73	2.27
02/01/11	2.19	2.00	0.14	1.72	2.28
03/01/11	2.28	2.02	0.14	1.74	2.31
03/29/11	2.28	2.03	0.15	1.72	2.34
05/03/11	2.66	2.07	0.20	1.67	2.48
05/10/11	2.39	2.09	0.21	1.66	2.52
05/31/11	2.27	2.11	0.22	1.67	2.54
07/06/11	2.10	2.10	0.22	1.67	2.54
08/02/11	2.18	2.11	0.22	1.67	2.54

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

CV = 10.29
EPA reference 75th quartile CV = 29%



Appendix C. (continued)

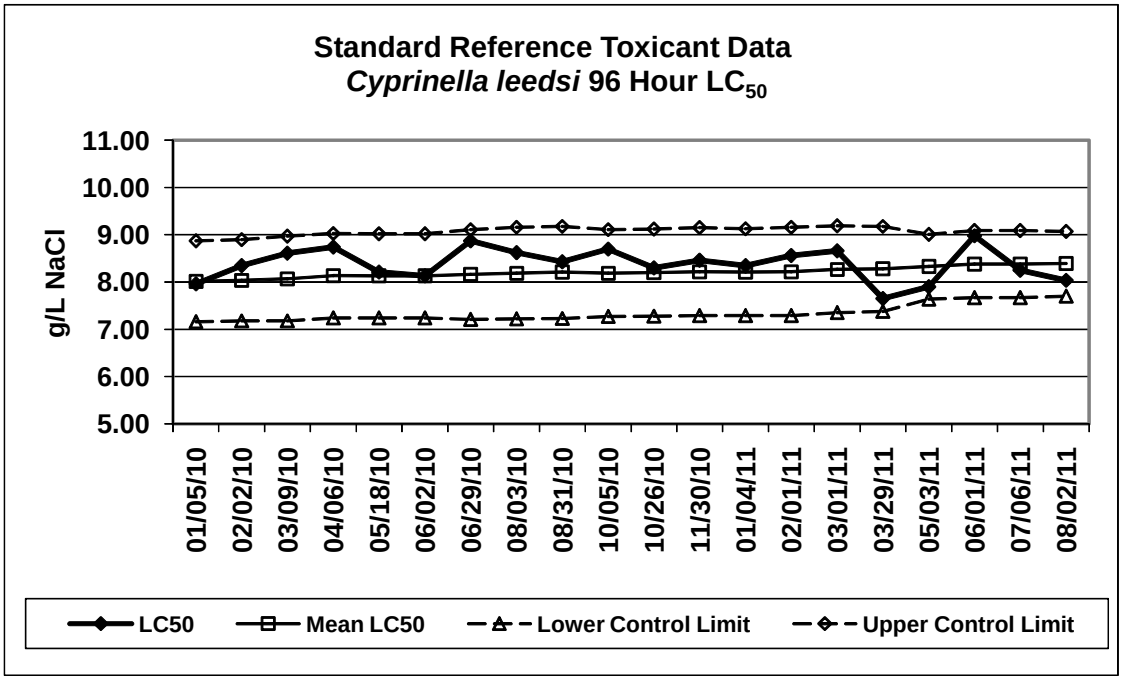
Florida Department of Environmental Protection
Bureau of Laboratories

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

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
01/05/10	7.96	8.01	0.43	7.16	8.87
02/02/10	8.35	8.04	0.43	7.18	8.90
03/09/10	8.61	8.07	0.45	7.18	8.97
04/06/10	8.74	8.14	0.45	7.24	9.03
05/18/10	8.21	8.13	0.45	7.24	9.02
06/02/10	8.13	8.13	0.45	7.24	9.02
06/29/10	8.87	8.16	0.47	7.21	9.11
08/03/10	8.62	8.19	0.48	7.22	9.16
08/31/10	8.43	8.21	0.49	7.23	9.18
10/05/10	8.70	8.19	0.46	7.27	9.11
10/26/10	8.30	8.20	0.46	7.28	9.12
11/30/10	8.46	8.22	0.46	7.29	9.15
01/04/11	8.35	8.21	0.46	7.29	9.13
02/01/11	8.56	8.22	0.47	7.29	9.16
03/01/11	8.66	8.27	0.46	7.35	9.19
03/29/11	7.65	8.28	0.45	7.38	9.18
05/03/11	7.90	8.33	0.34	7.64	9.01
06/01/11	8.98	8.38	0.36	7.67	9.09
07/06/11	8.25	8.38	0.36	7.67	9.09
08/02/11	8.04	8.39	0.34	7.70	9.07

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

CV = 4.09
EPA reference 75th quartile CV = 19%



Appendix C. (continued)

FDEP Biology Laboratory - Acute SRT Bench Sheet

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

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

Test Type: ☐ non-renewal ☑ renewal

Test Page 1 of 2

Diluent/ Batch #: DMW 7.28.11 **Organism Batch:** 8.2.11 **Test Beginning:** Date: 8.2.11 Time: 1015

Toxicant/ Batch#: NaCl 1.8.1.11 Age: <24 hrs **Test Ending:** Date: 8.6.11 Time: 1030

Water Quality Parameters:	Diluent	SOP	Initials
Total Residual Cl_2 (mg/L):	<0.03	TA06_22	BA
Alkalinity (mg/L as $CaCO_3$):	78	TA06_08	KC
Hardness (mg.L as $CaCO_3$):	80	TA06_09	KC
Total Ammonia (mg/L as N):	<0.017	TA06_17	MF
Conductivity: µmhos mmhos	173	TA06_25	KC
Salinity (ppth):	—	TA06_25	—

Food:	Batch
☑ YCT	5.5.11
☑ *P. subcapitata*	5.5.11
☐ Artemia Lot #	

Artemia Batch:

Chamber size: 30 mL

Test volume: 20 mL per replicate

0 hr:	
24 hr:	
48 hr:	
72 hr:	

Concentrations prepared by: KC

Test Incubated in: Incubator # 15 Waterbath # —

Light Intensity: 50-100 Ft. candles

Photoperiod: 16 hours Light / 8 hours dark

Temperature Range °C:(if used)

Incubator # KC 13 min 24.7 max 26.9 mean —

Waterbath # ___ min. ___ max. ___ mean ___

Room B246 min 24.8 max 25.9 mean —

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

all species 2 hrs prior to test

mysids daily

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

H. azteca 0 hr and 48 hr

Concentration µg/L	mg/L	g/L	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Control			A	A	5	5	5	5	5	5
			B	B	5	5	5	5	5	5
			C	C	5	5	5	5	5	5
			D	D	5	5	5	5	5	5
1.5			A	A	5	4 1D	4	4	4	4
			B	B	5	5	5	5	5	5
			C	C	5	5	5	5	5	5
			D	D	5	5	5	5	5	5
2.0			A	A	5	6	5	5	5	5
			B	B	5	5	4 1D	4 1D KC	2 2D	2
			C	C	5	5	4 1D	4	4	4
			D	D	5	5	5	5	5	5
2.5			A	A	5	5	3 2D	3	2 1D	2
			B	B	5	4 1D	3 1D	3	1 2D	1
			C	C	5	4 1D	1 3D	1	0 1D	—
			D	D	5	5	1 4D	1	0 1D	—
3.0			A	A	5	BA $3 2D	0 3D	0	—	—
			B	B	5	5	1 4D	1	1	0 1D
			C	C	5	4 1D	0 4D	0	—	—
			D	D	5	4 1D	0 4D	0	—	—
4.0			A	A	5	0 5D				
			B	B	5	0 5D				
			C	C	5	0 5D				
			D	D	5	0 3D				
Organisms loaded by: KC			Checked by:		BA	BA	KC	KC	BA	JD

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

Loading Verified by: BA AR = after renewal

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

Investigators' Signatures

Kara Cox

Brea Addo

James Daniel

Marshall Faircloth

Reviewer: Liz Miller

Comments:

Method: TSK

Statistics: LC50	95% confidence intervals Lower	Upper
48 hour: 2.55	2.35	2.77
96 hour: 2.18	2.05	2.33

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Revised 7/15/2008 mf

Appendix C. (continued)

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

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

Test Page 2 of 2

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

Test Beginning: Date: 8.2.11 Time: 1015
Test Ending: Date: 8.6.11 Time: 1030

Test Type: ☐ non-renewal ☑ renewal

hr = hour AR = after renewal BR = before renewal

Concentration µg/L mg/L g/L	Replicate	Test Hour	pH (SU)	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity ☐ µmhos ☑ mmhos	Salinity (ppth)
Control	M	0 hr	8.0	25.7	KC 8.8 8.4	0.173	
	—	24 hr	—	—	—	—	
	A	48 hr BR	8.0	24.0	7.8	0.199	
	M	48 hr AR	8.1	24.0	8.2	0.179	
	—	72 hr	—	—	—	—	
	M	96 hr	8.1	24.0	7.6	0.220	
1.5	M	0 hr	8.1	25.75 KC	8.5	2.87	
	—	24 hr	—	—	—	—	
	A	48 hr BR	8.2	24.0	7.7	3.03	
	M	48 hr AR	8.2	24.0	7.9	2.90	
	—	72 hr	—	—	—	—	
	M	96 hr	8.1	24.1	7.7	3.06	
2.0	M	0 hr	8.1	25.2	8.5	3.77	
	—	24 hr	—	—	—	—	
	A	48 hr BR	8.2	24.0	8.1	4.17	
	M	48 hr AR	8.2	24.0	7.9	3.76	
	—	72 hr	—	—	—	—	
	M	96 hr	8.1	24.1	7.8	4.03	
2.5	M	0 hr	8.1	24.8	8.5	4.69	
	—	24 hr	—	—	—	—	
	A	48 hr BR	8.2	24.0	8.2	4.96	
	M	48 hr AR	8.2	24.0	7.8	4.64	
	—	72 hr	—	—	—	—	
	M	96 hr	8.1	24.0	8.0	5.12	
3.0	M	0 hr	8.1	24.5	8.5	5.49	
	—	24 hr	—	—	—	—	
	A	48 hr BR	8.2	24.0	8.1	6.44	
	M	48 hr AR	8.2	24.0	7.8	5.46	
		72 hr	—	—	—	—	
	M	96 hr	8.1	24.1	7.7	6.29	
4.0	M	0 hr	8.1	24.0	8.6	7.14	
	A	24 hr	8.1	24.0	8.6	8.07	
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					

Investigators Signatures
Kaila Cook
Bruce Neiser
for Sarah
Marshall Faircloth

Reviewed By: Shannon

Measured by:
0 hr: KC
24 hr: BA
48 hr BR: KC
48 hr AR: KC
72 hr:
96 hr: JD

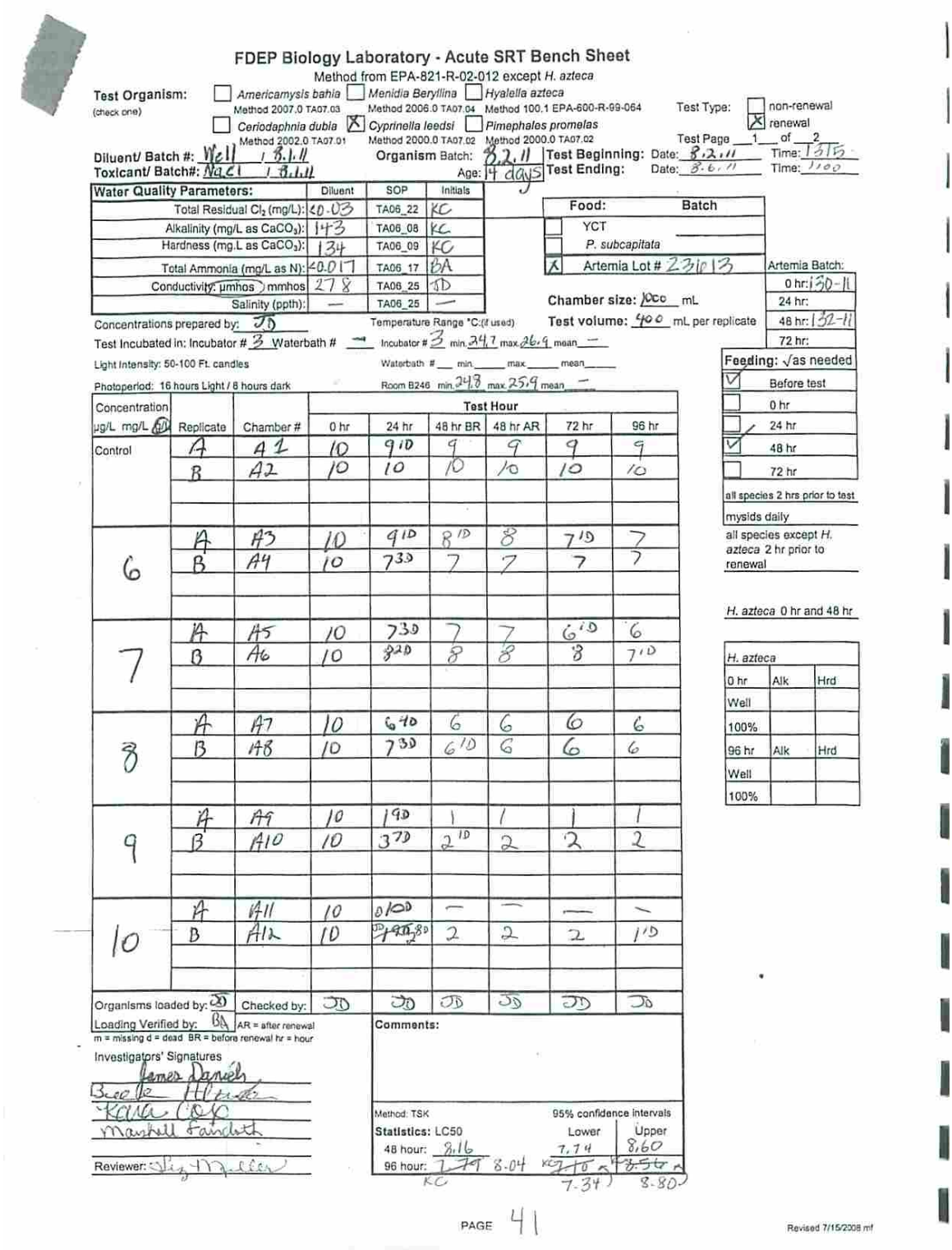
Measure/record salinity for marine tests

Comments: Parameters for Replicate C in the 2.5 g/L concentration were inadvertently not measured @ 72 hours, MF 8-5-11 MF

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Revised 07/15/2008 MF

Appendix C. (continued)



FDEP Biology Laboratory - Acute SRT Bench Sheet

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

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

Test Type: ☐ non-renewal ☒ renewal

Test Page 1 of 2

Diluent/ Batch #: Well / 3.1.11
Toxicant/ Batch#: NaCl / 3.1.11
Organism Batch: 3.2.11 Age: 14 days
Test Beginning: Date: 8.2.11 Time: 1315
Test Ending: Date: 8.6.11 Time: 1100

Water Quality Parameters:	Diluent	SOP	Initials
Total Residual Cl_2 (mg/L):	<0.03	TA06_22	KC
Alkalinity (mg/L as $CaCO_3$):	143	TA06_08	KC
Hardness (mg/L as $CaCO_3$):	134	TA06_09	KC
Total Ammonia (mg/L as N):	<0.017	TA06_17	BA
Conductivity: µmhos mmhos	278	TA06_25	JD
Salinity (ppth):	—	TA06_25	—

Food:	Batch
☐ YCT	
☐ *P. subcapitata*	
☒ Artemia Lot #	23013

Artemia Batch:
0 hr: 1330-11
24 hr:
48 hr: 1332-11
72 hr:

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

Concentrations prepared by: JD
Test Incubated in: Incubator # 3 Waterbath # —
Temperature Range °C: (if used)
Incubator # 3 min. 24.7 max. 26.9 mean —
Waterbath # ___ min. ___ max. ___ mean ___
Room B246 min. 24.8 max. 25.9 mean —
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark

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

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

Concentration µg/L mg/L (circle)	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Control	A	A1	10	9 ID	9	9	9	9
	B	A2	10	10	10	10	10	10
6	A	A3	10	9 ID	8 ID	8	7 ID	7
	B	A4	10	7 3D	7	7	7	7
7	A	A5	10	7 3D	7	7	6 ID	6
	B	A6	10	8 2D	8	8	8	7 ID
8	A	A7	10	6 4D	6	6	6	6
	B	A8	10	7 3D	6 ID	6	6	6
9	A	A9	10	1 9D	1	1	1	1
	B	A10	10	3 7D	2 ID	2	2	2
10	A	A11	10	0 10D	—	—	—	—
	B	A12	10	~~1 9D~~ 1 8D	2	2	2	1 ID

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

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

Investigators' Signatures
James Daniels
Brooke Hilmer
Kara Cox
Marshall Faircloth

Reviewer: Liz Miller

Comments:

Method: TSK

Statistics: LC50	95% confidence intervals Lower	Upper
48 hour: 8.16	7.74	8.60
96 hour: ~~7.79~~ 8.04 KC	~~7.10~~ 7.34	~~8.56~~ 8.80

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Revised 7/15/2008 mf

Appendix C. (continued)

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

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

Test Page 2 of 2

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

Test Beginning: Date: 8.2.11 Time: 1315
Test Ending: Date: 8.6.11 Time: 1100
Test Type: ☐ non-renewal ☒ renewal

hr = hour AR = after renewal BR = before renewal

Concentration µg/L mg/L (circle)	Replicate	Test Hour	pH (SU)	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity ☐ µmhos ☒ mmhos	Salinity (ppth)
Control	A	0 hr	7.8	25.2	8.2	0.278	
	B	24 hr	7.7	24.5	7.6	0.288	
	A	48 hr BR	8.2	25.4	7.0	0.308	
	A	48 hr AR	7.8	25.8	7.3	0.292	
	B	72 hr	8.0	25.1	6.5	0.281	
	A	96 hr	8.0	25.9	6.4	0.353	
6	A	0 hr	8.0	25.9	7.7	10.8	
	B	24 hr	7.9	24.5	7.4	10.5	
	A	48 hr BR	8.2	25.6	6.7	11.1	
	A	48 hr AR	7.9	25.9	7.1	10.9	
	B	72 hr	8.0	25.4	6.3	11.2	
	A	96 hr	8.1	25.8	6.9	9.92	
7	A	0 hr	8.0	25.9	7.8	13.0	
	B	24 hr	7.9	24.9	7.3	12.7	
	A	48 hr BR	8.2	25.5	6.8	13.3	
	A	48 hr AR	8.0	25.8	6.8	12.9	
	B	72 hr	8.0	24.9	6.4	12.6	
	A	96 hr	8.1	25.8	6.9	13.0	
8	A	0 hr	8.0	25.9	7.8	14.4	
	B	24 hr	7.9	24.7	7.0	14.2	
	A	48 hr BR	8.2	25.9	6.7	14.6	
	A	48 hr AR	8.0	25.7	6.8	14.4	
	B	72 hr	7.9	25.9	6.2	14.5	
	A	96 hr	8.1	25.9	6.7	14.6	
9	A	0 hr	8.0	25.9	7.7	16.1	
	B	24 hr	7.9	24.6	6.9	15.9	
	A	48 hr BR	8.2	25.4	6.6	16.7	
	A	48 hr AR	8.0	25.6	6.9	16.1	
	B	72 hr	7.9	25.8	5.7	15.9	
	A	96 hr	8.1	25.9	6.7	16.3	
10	A	0 hr	8.0	25.9	7.5	18.0	
	B	24 hr	7.9	25.3	6.2	17.9	
	B	48 hr BR	8.2	24.9	6.8	18.1	
	B	48 hr AR	8.0	25.9	7.0	18.1	
	B	72 hr	8.1	25.6	6.4	17.8	
	B	96 hr	8.2	25.6	6.8	18.1	

Investigators Signatures: James Daniel, Brooke Hilyard, Kara Lidy, Marshall Faircloth

Reviewed By: Steve Miller

Measured by:
- 0 hr: JD
- 24 hr: JD
- 48 hr BR: JD
- 48 hr AR: JD
- 72 hr: JD
- 96 hr: JD

Measure/record salinity for marine tests

Comments:

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Revised 07/15/2008 MF

Appendix C. (continued)

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

DATE: 8/02/201 DURATION: 96 hr TOXICANT : NaCl
SPECIES: *Ceriodaphnia dubia*

RAW DATA: Concentration (g/L)	Number Exposed	Mortalities
.00	20	0
1.50	20	1
2.00	20	4
2.50	20	17
3.00	20	20
4.00	20	20

SPEARMAN-KARBER TRIM: 5.00%

SPEARMAN-KARBER ESTIMATES: LC50: 2.18
95% LOWER CONFIDENCE: 2.05
95% UPPER CONFIDENCE: 2.33

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

DATE: 8/2/11 DURATION: 96 h TOXICANT : NaCl
SPECIES: *Cyprinella leedsi*

RAW DATA: Concentration (g/L)	Number Exposed	Mortalities
.00	20	1
6.00	20	6
7.00	20	7
8.00	20	8
9.00	20	17
10.00	20	19

SPEARMAN-KARBER TRIM: 26.32%

SPEARMAN-KARBER ESTIMATES: LC50: 8.04
95% LOWER CONFIDENCE: 7.34
95% UPPER CONFIDENCE: 8.80

NOTE: MORTALITY PROPORTIONS WERE NOT MONOTONICALLY INCREASING.
ADJUSTMENTS WERE MADE PRIOR TO SPEARMAN-KARBER ESTIMATION.

Appendix D. Test Organism Receipts

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Shipping Date: 8/1/11

Ship to: FDEP

P.O. No:

Species	Quantity	Age	Brood/Lot Number	Temp. (°C)	pH (S.U.)	Salinity (°/₀₀)
Mysidopsis bahia	150 ac	4 DAYS	MS 110728	25	7.9	20
Menidia beryllina	150 ac	12 DAYS	SS 110720	25	7.9	20
						Hardness mg/L
Cyprinella leedsi	150 ac	13 DAYS	CL 110719	25	7.8	80
Pimephales promelas	150 ac	7 DAYS	FM 110725	25	7.8	80
Ceriodaphnia dubia						
Daphnia magna						
YCT						
P. subcapitata						

Packed by: PR

Shipped Via: Fed Ex

Notes:

Thank you for your order.

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

Appendix D. (continued)

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Shipping Date: 8/29/11

Ship to: FDEP

P.O. No: _____

Species	Quantity	Age	Brood/Lot Number	Temp. (°C)	pH (S.U.)	Salinity (‰)
Mysidopsis bahia	150 ac	4 DAYS	MS 110825	25	7.9	20
Menidia beryllina	150 ac	12 DAYS	SS 110817	25	7.9	20
						Hardness mg/L
Cyprinella leedsi	150 ac	11 DAYS	CL 110818	25	7.8	80
Pimephales promelas						
Ceriodaphnia dubia						
Daphnia magna						
YCT						
P. subcapitata						

Packed by: PM

Shipped Via: FedEx

Notes: _____

Thank you for your order.

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

Appendix E. Chemical Analyses performed on the effluent from the Kings Gate Club, Inc. RO WTP Outfall D-001, sampled on August 29, 2011.

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
8/29/2011 10:25	D-001	Chlorophyll/Grain Size/BOD	Phaeophytin-a	4.8		ug/L	0.4	1.2
8/29/2011 10:25	D-001	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	16		ug/L	0.55	1.7
8/29/2011 10:25	D-001	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	28	V	mg/L	0.2	2
8/29/2011 10:25	D-001	Toxicology	Bioassay-Acute-Def-FW-C.dubia, LC50	100	L	LC50		
8/29/2011 10:25	D-001	Toxicology	Bioassay-Acute-Def-FW-Fish, LC50	100	L	LC50		
8/29/2011 10:25	D-001	Metals	Zinc	5	U	ug/L	5	20
8/29/2011 10:25	D-001	Metals	Beryllium	0.025	U	ug/L	0.025	0.1
8/29/2011 10:25	D-001	Metals	Chromium	0.59	I	ug/L	0.3	1.2
8/29/2011 10:25	D-001	Metals	Aluminum	21		ug/L	5	20
8/29/2011 10:25	D-001	Metals	Copper	5.37		ug/L	0.5	1
8/29/2011 10:25	D-001	Metals	Cadmium	0.05	U	ug/L	0.05	0.2
8/29/2011 10:25	D-001	Metals	Magnesium	21.1		mg/L	0.04	0.16
8/29/2011 10:25	D-001	Metals	Iron	82	I	ug/L	30	120
8/29/2011 10:25	D-001	Metals	Silver	0.025	U	ug/L	0.025	0.1
8/29/2011 10:25	D-001	Metals	Nickel	0.3	I	ug/L	0.25	1
8/29/2011 10:25	D-001	Metals	Antimony	0.25	U	ug/L	0.25	1
8/29/2011 10:25	D-001	Metals	Calcium	67.7		mg/L	0.075	0.3
8/29/2011 10:25	D-001	Metals	Lead	0.2	U	ug/L	0.2	0.8
8/29/2011 10:25	D-001	Metals	Arsenic	3.59		ug/L	0.25	1
8/29/2011 10:25	D-001	Metals	Selenium	0.2	U	ug/L	0.2	0.8
8/29/2011 10:25	D-001	Nutrients	Total-P	0.11		mg P/L	0.01	0.1
8/29/2011 10:25	D-001	Nutrients	NO2NO3-N	0.016		mg N/L	0.005	0.01
8/29/2011 10:25	D-001	Nutrients	O-Phosphate-P	0.055		mg P/L	0.004	0.01
8/29/2011 10:25	D-001	Nutrients	Fluoride	0.42		mg F/L	0.035	0.1
8/29/2011 10:25	D-001	Nutrients	TSS	9	I	mg/L	2	10
8/29/2011 10:25	D-001	Nutrients	Ammonia-N	0.018	I	mg N/L	0.01	0.02
8/29/2011 10:25	D-001	Nutrients	Kjeldahl Nitrogen	0.97		mg N/L	0.16	0.4
8/29/2011 10:25	D-001	Overflow	Alpha, Total	3.5		pCi/L		
8/29/2011 10:25	D-001	Overflow	Alpha-Counting Error	1.4		pCi/L		
8/29/2011 10:25	D-001	Overflow	Radium 226	0.6		pCi/L	0.1	
8/29/2011 10:25	D-001	Overflow	Radium 228-Counting Error	0.6		pCi/L		

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
8/29/2011 10:25	D-001	Overflow	Radium 228	1	U	pCi/L	1	
8/29/2011 10:25	D-001	Overflow	Radium 226-Counting Error	0.1		pCi/L		
8/29/2011 10:25	D-001	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2
8/29/2011 10:25	D-001	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
8/29/2011 10:25	D-001	Pesticides	Phorate	0.05	U	ug/L	0.05	0.2
8/29/2011 10:25	D-001	Pesticides	Alachlor	0.6	U	ug/L	0.6	2.4
8/29/2011 10:25	D-001	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
8/29/2011 10:25	D-001	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6
8/29/2011 10:25	D-001	Pesticides	Ethoprop	0.1	U	ug/L	0.1	0.4
8/29/2011 10:25	D-001	Pesticides	Atrazine	0.066	I	ug/L	0.05	0.2
8/29/2011 10:25	D-001	Pesticides	Metolachlor	0.5	U	ug/L	0.5	2
8/29/2011 10:25	D-001	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
8/29/2011 10:25	D-001	Pesticides	Parathion Methyl	0.1	U	ug/L	0.1	0.4
8/29/2011 10:25	D-001	Pesticides	Chlorpyrifos Methyl	0.1	U	ug/L	0.1	0.4
8/29/2011 10:25	D-001	Pesticides	Diazinon	0.05	U	ug/L	0.05	0.2
8/29/2011 10:25	D-001	Pesticides	Azinphos Methyl	0.2	U	ug/L	0.2	0.8
8/29/2011 10:25	D-001	Pesticides	Butylate	0.2	U	ug/L	0.2	0.8
8/29/2011 10:25	D-001	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8
8/29/2011 10:25	D-001	Pesticides	Fonofos	0.1	U	ug/L	0.1	0.4
8/29/2011 10:25	D-001	Pesticides	Hexazinone	0.1	U	ug/L	0.1	0.4
8/29/2011 10:25	D-001	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
8/29/2011 10:25	D-001	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	1
8/29/2011 10:25	D-001	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
8/29/2011 10:25	D-001	Pesticides	Bromacil	0.2	UJ	ug/L	0.2	0.8
8/29/2011 10:25	D-001	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2
8/29/2011 10:25	D-001	Pesticides	Metribuzin	0.1	U	ug/L	0.1	0.4
8/29/2011 10:25	D-001	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.8
8/29/2011 10:25	D-001	Pesticides	Naled	0.8	U	ug/L	0.8	3.2
8/29/2011 10:25	D-001	Priority Organic Pollutants	2,4-Dichlorophenol	0.97	U	ug/L	0.97	3.9
8/29/2011 10:25	D-001	Priority Organic Pollutants	2,4-Dinitrophenol	15	U	ug/L	15	58
8/29/2011 10:25	D-001	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	U	ug/L	1.9	7.8
8/29/2011 10:25	D-001	Priority Organic Pollutants	Hexachloroethane	2.9	U	ug/L	2.9	12
8/29/2011 10:25	D-001	Priority Organic Pollutants	Dimethyl phthalate	9.7	U	ug/L	9.7	39
8/29/2011 10:25	D-001	Priority Organic Pollutants	Diethyl phthalate	0.97	U	ug/L	0.97	3.9

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
8/29/2011 10:25	D-001	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9	U	ug/L	2.9	12
8/29/2011 10:25	D-001	Priority Organic Pollutants	Benzo(k)fluoranthene	0.19	U	ug/L	0.19	0.78
8/29/2011 10:25	D-001	Priority Organic Pollutants	2,4-Dinitrotoluene	0.97	U	ug/L	0.97	3.9
8/29/2011 10:25	D-001	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	U	ug/L	1.9	7.8
8/29/2011 10:25	D-001	Priority Organic Pollutants	Anthracene	0.19	U	ug/L	0.19	0.78
8/29/2011 10:25	D-001	Priority Organic Pollutants	Benzo(a)pyrene	0.19	U	ug/L	0.19	0.78
8/29/2011 10:25	D-001	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	15	U	ug/L	15	58
8/29/2011 10:25	D-001	Priority Organic Pollutants	Butyl benzyl phthalate	4.9	U	ug/L	4.9	19
8/29/2011 10:25	D-001	Priority Organic Pollutants	Di-n-butyl phthalate	4.9	U	ug/L	4.9	19
8/29/2011 10:25	D-001	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.97	U	ug/L	0.97	3.9
8/29/2011 10:25	D-001	Priority Organic Pollutants	Benzo(a)anthracene	0.19	U	ug/L	0.19	0.78
8/29/2011 10:25	D-001	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.19	U	ug/L	0.19	0.78
8/29/2011 10:25	D-001	Priority Organic Pollutants	Fluorene	0.19	U	ug/L	0.19	0.78
8/29/2011 10:25	D-001	Priority Organic Pollutants	Hexachlorobenzene	0.97	U	ug/L	0.97	3.9
8/29/2011 10:25	D-001	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.19	U	ug/L	0.19	0.78
8/29/2011 10:25	D-001	Priority Organic Pollutants	Isophorone	0.97	U	ug/L	0.97	3.9
8/29/2011 10:25	D-001	Priority Organic Pollutants	Naphthalene	0.19	U	ug/L	0.19	0.78
8/29/2011 10:25	D-001	Priority Organic Pollutants	Phenol	0.97	U	ug/L	0.97	3.9
8/29/2011 10:25	D-001	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.97	U	ug/L	0.97	3.9
8/29/2011 10:25	D-001	Priority Organic Pollutants	Acenaphthylene	0.19	U	ug/L	0.19	0.78
8/29/2011 10:25	D-001	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.97	U	ug/L	0.97	3.9
8/29/2011 10:25	D-001	Priority Organic Pollutants	Nitrobenzene	1.9	U	ug/L	1.9	7.8
8/29/2011 10:25	D-001	Priority Organic Pollutants	Pyrene	0.19	U	ug/L	0.19	0.78
8/29/2011 10:25	D-001	Priority Organic Pollutants	2-Chloronaphthalene	0.97	U	ug/L	0.97	3.9
8/29/2011 10:25	D-001	Priority Organic Pollutants	Benzo(b)fluoranthene	0.19	U	ug/L	0.19	0.78
8/29/2011 10:25	D-001	Priority Organic Pollutants	Di-n-octyl phthalate	0.97	U	ug/L	0.97	3.9
8/29/2011 10:25	D-001	Priority Organic Pollutants	Hexachlorobutadiene	2.9	U	ug/L	2.9	12
8/29/2011 10:25	D-001	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.97	U	ug/L	0.97	3.9
8/29/2011 10:25	D-001	Priority Organic Pollutants	2,4-Dimethylphenol	9.7	U	ug/L	9.7	39
8/29/2011 10:25	D-001	Priority Organic Pollutants	2,6-Dinitrotoluene	0.97	U	ug/L	0.97	3.9
8/29/2011 10:25	D-001	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	58
8/29/2011 10:25	D-001	Priority Organic Pollutants	Chrysene	0.19	U	ug/L	0.19	0.78
8/29/2011 10:25	D-001	Priority Organic Pollutants	Fluoranthene	0.19	U	ug/L	0.19	0.78
8/29/2011 10:25	D-001	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9	U	ug/L	2.9	12

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
8/29/2011 10:25	D-001	Priority Organic Pollutants	2-Chlorophenol	0.97	U	ug/L	0.97	3.9
8/29/2011 10:25	D-001	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9	U	ug/L	2.9	12
8/29/2011 10:25	D-001	Priority Organic Pollutants	2-Nitrophenol	0.97	U	ug/L	0.97	3.9
8/29/2011 10:25	D-001	Priority Organic Pollutants	3,3'-Dichlorobenzidine	39	UJ	ug/L	39	160
8/29/2011 10:25	D-001	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.97	U	ug/L	0.97	3.9
8/29/2011 10:25	D-001	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.19	U	ug/L	0.19	0.78
8/29/2011 10:25	D-001	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	U	ug/L	1.9	7.8
8/29/2011 10:25	D-001	Priority Organic Pollutants	Pentachlorophenol	2.9	U	ug/L	2.9	12
8/29/2011 10:25	D-001	Priority Organic Pollutants	Acenaphthene	0.19	U	ug/L	0.19	0.78
8/29/2011 10:25	D-001	Priority Organic Pollutants	Benzidine	97	U	ug/L	97	390
8/29/2011 10:25	D-001	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.97	U	ug/L	0.97	3.9
8/29/2011 10:25	D-001	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9	U	ug/L	2.9	12
8/29/2011 10:25	D-001	Priority Organic Pollutants	Phenanthrene	0.19	U	ug/L	0.19	0.78
8/29/2011 10:25	D-001	Field Parameter	pH	7.95				
8/29/2011 10:25	D-001	Field Parameter	Sample Depth	0.1		m		
8/29/2011 10:25	D-001	Field Parameter	Dissolved Oxygen	7.08		mg/L		
8/29/2011 10:25	D-001	Field Parameter	Specific Conductance	5831		umhos/cm		
8/29/2011 10:25	D-001	Field Parameter	Temperature	31.74		C		
8/29/2011 11:00	BLANK	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	0.2	UV	mg/L	0.2	2
8/29/2011 11:00	BLANK	Metals	Nickel	0.25	U	ug/L	0.25	1
8/29/2011 11:00	BLANK	Metals	Antimony	0.25	U	ug/L	0.25	1
8/29/2011 11:00	BLANK	Metals	Cadmium	0.05	U	ug/L	0.05	0.2
8/29/2011 11:00	BLANK	Metals	Lead	0.2	U	ug/L	0.2	0.8
8/29/2011 11:00	BLANK	Metals	Selenium	0.2	U	ug/L	0.2	0.8
8/29/2011 11:00	BLANK	Metals	Iron	30	U	ug/L	30	120
8/29/2011 11:00	BLANK	Metals	Chromium	0.3	U	ug/L	0.3	1.2
8/29/2011 11:00	BLANK	Metals	Beryllium	0.025	U	ug/L	0.025	0.1
8/29/2011 11:00	BLANK	Metals	Arsenic	0.25	U	ug/L	0.25	1
8/29/2011 11:00	BLANK	Metals	Calcium	0.075	U	mg/L	0.075	0.3
8/29/2011 11:00	BLANK	Metals	Aluminum	5	U	ug/L	5	20
8/29/2011 11:00	BLANK	Metals	Zinc	5	U	ug/L	5	20
8/29/2011 11:00	BLANK	Metals	Magnesium	0.04	U	mg/L	0.04	0.16
8/29/2011 11:00	BLANK	Metals	Silver	0.025	U	ug/L	0.025	0.1
8/29/2011 11:00	BLANK	Metals	Copper	0.5	U	ug/L	0.5	1

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
8/29/2011 11:00	BLANK	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
8/29/2011 11:00	BLANK	Nutrients	NO2NO3-N	0.004	U	mg N/L	0.004	0.01
8/29/2011 11:00	BLANK	Nutrients	Kjeldahl Nitrogen	0.08	U	mg N/L	0.08	0.2
8/29/2011 11:00	BLANK	Nutrients	Total-P	0.004	U	mg P/L	0.004	0.01
8/29/2011 11:00	BLANK	Nutrients	Fluoride	0.035	U	mg F/L	0.035	0.1
8/29/2011 11:00	BLANK	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
8/29/2011 11:00	BLANK	Overflow	Radium 226	0.2	U	pCi/L	0.1	
8/29/2011 11:00	BLANK	Overflow	Radium 226-Counting Error	0.1		pCi/L		
8/29/2011 11:00	BLANK	Overflow	Radium 228	1	U	pCi/L	1	
8/29/2011 11:00	BLANK	Overflow	Radium 228-Counting Error	0.6		pCi/L		
8/29/2011 11:00	BLANK	Overflow	Alpha-Counting Error	0.4		pCi/L		
8/29/2011 11:00	BLANK	Overflow	Alpha, Total	0.7	U	pCi/L		
8/29/2011 11:00	BLANK	Pesticides	Atrazine	0.048	U	ug/L	0.048	0.19
8/29/2011 11:00	BLANK	Pesticides	Metolachlor	0.48	U	ug/L	0.48	1.9
8/29/2011 11:00	BLANK	Pesticides	Mevinphos	0.19	U	ug/L	0.19	0.77
8/29/2011 11:00	BLANK	Pesticides	Parathion Ethyl	0.14	U	ug/L	0.14	0.58
8/29/2011 11:00	BLANK	Pesticides	Metalaxyl	0.24	UJ	ug/L	0.24	0.96
8/29/2011 11:00	BLANK	Pesticides	Parathion Methyl	0.096	U	ug/L	0.096	0.38
8/29/2011 11:00	BLANK	Pesticides	Metribuzin	0.096	U	ug/L	0.096	0.38
8/29/2011 11:00	BLANK	Pesticides	Naled	0.77	U	ug/L	0.77	3.1
8/29/2011 11:00	BLANK	Pesticides	Chlorpyrifos Methyl	0.096	U	ug/L	0.096	0.38
8/29/2011 11:00	BLANK	Pesticides	Diazinon	0.048	U	ug/L	0.048	0.19
8/29/2011 11:00	BLANK	Pesticides	Hexazinone	0.096	U	ug/L	0.096	0.38
8/29/2011 11:00	BLANK	Pesticides	Alachlor	0.58	U	ug/L	0.58	2.3
8/29/2011 11:00	BLANK	Pesticides	Ametryn	0.048	U	ug/L	0.048	0.19
8/29/2011 11:00	BLANK	Pesticides	Butylate	0.19	U	ug/L	0.19	0.77
8/29/2011 11:00	BLANK	Pesticides	Chlorpyrifos Ethyl	0.048	U	ug/L	0.048	0.19
8/29/2011 11:00	BLANK	Pesticides	Ethion	0.048	U	ug/L	0.048	0.19
8/29/2011 11:00	BLANK	Pesticides	Fenamiphos	0.19	U	ug/L	0.19	0.77
8/29/2011 11:00	BLANK	Pesticides	Fonofos	0.096	U	ug/L	0.096	0.38
8/29/2011 11:00	BLANK	Pesticides	Ethoprop	0.096	U	ug/L	0.096	0.38
8/29/2011 11:00	BLANK	Pesticides	Prometryn	0.14	U	ug/L	0.14	0.58
8/29/2011 11:00	BLANK	Pesticides	Simazine	0.048	U	ug/L	0.048	0.19
8/29/2011 11:00	BLANK	Pesticides	Azinphos Methyl	0.19	U	ug/L	0.19	0.77

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
8/29/2011 11:00	BLANK	Pesticides	Norflurazon	0.14	U	ug/L	0.14	0.58
8/29/2011 11:00	BLANK	Pesticides	Phorate	0.048	U	ug/L	0.048	0.19
8/29/2011 11:00	BLANK	Pesticides	Bromacil	0.19	UJ	ug/L	0.19	0.77
8/29/2011 11:00	BLANK	Pesticides	Malathion	0.14	U	ug/L	0.14	0.58
8/29/2011 11:00	BLANK	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.95	U	ug/L	0.95	3.8
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Naphthalene	0.19	U	ug/L	0.19	0.76
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Pyrene	0.19	U	ug/L	0.19	0.76
8/29/2011 11:00	BLANK	Priority Organic Pollutants	2,4-Dimethylphenol	9.5	U	ug/L	9.5	38
8/29/2011 11:00	BLANK	Priority Organic Pollutants	2,4-Dinitrotoluene	0.95	U	ug/L	0.95	3.8
8/29/2011 11:00	BLANK	Priority Organic Pollutants	2,6-Dinitrotoluene	0.95	U	ug/L	0.95	3.8
8/29/2011 11:00	BLANK	Priority Organic Pollutants	2-Chlorophenol	0.95	U	ug/L	0.95	3.8
8/29/2011 11:00	BLANK	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.95	U	ug/L	0.95	3.8
8/29/2011 11:00	BLANK	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.95	U	ug/L	0.95	3.8
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9	U	ug/L	2.9	11
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Diethyl phthalate	0.95	U	ug/L	0.95	3.8
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Dimethyl phthalate	9.5	U	ug/L	9.5	38
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.19	U	ug/L	0.19	0.76
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Pentachlorophenol	2.9	U	ug/L	2.9	11
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Phenanthrene	0.19	U	ug/L	0.19	0.76
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Phenol	0.95	U	ug/L	0.95	3.8
8/29/2011 11:00	BLANK	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.95	U	ug/L	0.95	3.8
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Fluoranthene	0.19	U	ug/L	0.19	0.76
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.95	U	ug/L	0.95	3.8
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.19	U	ug/L	0.19	0.76
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Benzidine	95	U	ug/L	95	380
8/29/2011 11:00	BLANK	Priority Organic Pollutants	4-Nitrophenol	14	U	ug/L	14	57
8/29/2011 11:00	BLANK	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	U	ug/L	1.9	7.6
8/29/2011 11:00	BLANK	Priority Organic Pollutants	2-Chloronaphthalene	0.95	U	ug/L	0.95	3.8
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Benzo(k)fluoranthene	0.19	U	ug/L	0.19	0.76
8/29/2011 11:00	BLANK	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	U	ug/L	1.9	7.6
8/29/2011 11:00	BLANK	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9	U	ug/L	2.9	11
8/29/2011 11:00	BLANK	Priority Organic Pollutants	2-Nitrophenol	0.95	U	ug/L	0.95	3.8
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Benzo(a)pyrene	0.19	U	ug/L	0.19	0.76
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	14	U	ug/L	14	57

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Acenaphthene	0.19	U	ug/L	0.19	0.76
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Anthracene	0.19	U	ug/L	0.19	0.76
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Chrysene	0.19	U	ug/L	0.19	0.76
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.19	U	ug/L	0.19	0.76
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Isophorone	0.95	U	ug/L	0.95	3.8
8/29/2011 11:00	BLANK	Priority Organic Pollutants	2,4-Dichlorophenol	0.95	U	ug/L	0.95	3.8
8/29/2011 11:00	BLANK	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38	U	ug/L	38	150
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Acenaphthylene	0.19	U	ug/L	0.19	0.76
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Benzo(b)fluoranthene	0.19	U	ug/L	0.19	0.76
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Butyl benzyl phthalate	4.8	U	ug/L	4.8	19
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Di-n-butyl phthalate	4.8	U	ug/L	4.8	19
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Di-n-octyl phthalate	0.95	U	ug/L	0.95	3.8
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Hexachlorobenzene	0.95	U	ug/L	0.95	3.8
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9	U	ug/L	2.9	11
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Hexachloroethane	2.9	U	ug/L	2.9	11
8/29/2011 11:00	BLANK	Priority Organic Pollutants	2,4-Dinitrophenol	14	U	ug/L	14	57
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Benzo(a)anthracene	0.19	U	ug/L	0.19	0.76
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.95	U	ug/L	0.95	3.8
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Fluorene	0.19	U	ug/L	0.19	0.76
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Hexachlorobutadiene	2.9	U	ug/L	2.9	11
8/29/2011 11:00	BLANK	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	U	ug/L	1.9	7.6
8/29/2011 11:00	BLANK	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9	U	ug/L	2.9	11
8/29/2011 11:00	BLANK	Priority Organic Pollutants	Nitrobenzene	1.9	U	ug/L	1.9	7.6

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

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: Pete Wenner	**Contact Number:** 813-632-7600 x442
Facility Name (as it appears on permit): Kings Gate Club, Inc., RO WTP	**Former Names:**
NPDES Permit Number: FL0188859	**Permit Expiration Date:** June 6, 2012
Physical Address: Castle Drive (Between Camelot Dr. & Dutchess Ave.)	
District: Southwest	**County:** Sarasota
Function of Facility: Facility is a water treatment plant which provides potable water to the residents of Kings Gate Club Mobile Home Park.	
Facility Type: I/W, Reverse Osmosis	**Permitted Capacity (MGD):** Annual Average Daily Flow (AADF): 0.010
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): 07/2010-06/2011: 0.0075 MGD	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months):	
Description of type of Discharge: ☐ **Continuous** ☒ **Intermittent** ☐ **Seasonal** ☐ **Rainfall Dependent** ☐ **Other, please specify**	
Description of Sampling Location(s) - actual permit designation of permitted sampling point(s): FLW-1: RO concentrate discharged into stormwater pond. EFF-1: End of outfall pipe for the discharge from the stormwater pond at Outfall D-001 prior to discharge to Salt Creek.	
Description of Permitted Outfall(s): The discharge of reverse osmosis concentrate is routed to the on-site stormwater pond through a 2-inch PVC pipe at a depth of about 2 feet. Any overflow from the stormwater pond (outfall D-001) is discharged through 5 overflow pipes to Salt Creek that ultimately empties into Shakett Creek and thence Dona Bay (Class III Marine Waters.	
Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility): The water plant uses reverse osmosis to remove minerals from the water and these minerals are then discharged as concentrate.	

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Appendix F. (continued)

Parameters (units)	Discharge Limitations				Monitoring Requirements		
	Annual Average	Monthly Average	Daily Maximum	Daily Minimum	Monitoring Frequency	Sample Type	Sample Point
Flow (MGD)	0.010 See Permit Cond. I.A.8	Report See Permit Cond I.A.7	--	--	Continuous	Meter	FLW-1
pH (SU)	--	--	8.5	6.5	Quarterly	Instantaneous	EFF-1
Fluoride, Total (as F) (MG/L)	--	--	5.0	--	Quarterly	Grab	EFF-1
Oxygen, Dissolved (DO) (MG/L)	--	--	--	4.0	Quarterly	Instantaneous	EFF-1
Alpha, Gross Particle Activity (PCI/L)	--	--	15.0	--	Quarterly	Grab	EFF-1
Radium 226 + Radium 228, Total (PCI/L)	--	--	5.0	--	Quarterly	Grab	EFF-1
Whole Effluent Toxicity (Acute)	See Permit Condition I.A.3						EFF-1

Appendix F. (continued)

PART I: Continued	
Receiving Waters: Dona Bay	**Classification (indicate whether fresh or marine):** Class III Marine

Toxicity Test Requirements (routine and/or additional test language, test species, salinity adjustment, etc.):
WET Test: Acute Definitive
Frequency: Within 12 months of permit renewal, when applying for a Substantial Permit Revision, or, upon failure of a toxicity test in accordance with Rule 62-620.625 (6)(d), F.A.C.. Samples shall be collected within twenty hours of the commencement of the discharge.
End Point: Whole effluent acute toxicity shall not exceed in aany "routine" of in any "additional follow-up" test an LC50 of less that 100% effluent [Rule 62-302.200(1), Rule 62-302.500(1)(a)4., and Rule 62-4.244(3)(a), F.A.C.]
Toxicity language in its entirety included as separate email attachment.

Administrative or Consent Orders (date executed, specific requirements, interim limit dates-if applicable, etc.): Consent Order: OGC File No. 09-3698, case closed November 2009. Closure letter included as separate email attachment.

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

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

Date	Parameter and Units	Limit	Result
N/A			

Describe previous FYI and WQBEL study: Previous FYI final report included as separate email attachment.

Describe previous or current Enforcement Actions (including WLs):

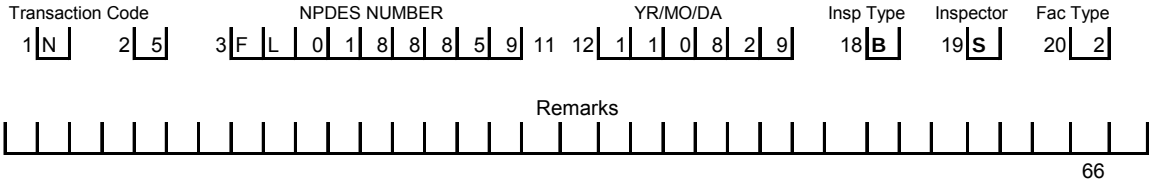
Describe any violations or problems noted in previous inspection:

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

Appendix G. EPA End Sheet

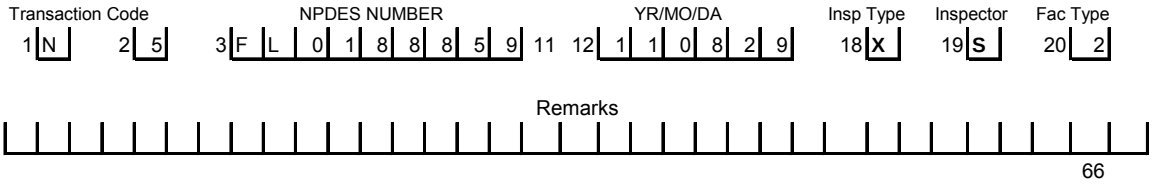
The Bioassay of Kings Gate Club, Inc., RO WTP effluent sampled on August 29, 2011. NPDES #FL0188859.

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



The Priority Pollutants Analysis of Kings Gate Club, Inc., RO WTP effluent sampled on August 29, 2011. NPDES #FL0188859.

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



Biological Analyses of Kings Gate Club, Inc., RO WTP effluent sampled on August 29, 2011. NPDES #FL0188859.

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

