

Effluent Quality Assessment

AOC, L.L.C.

Polk County

NPDES #FL0029653

Sampled December 17, 2012

March 2013

Biology Section
Bureau of Laboratories
Division of Environmental Assessment and Restoration

Quality Manual No. 870346G
NELAC Certification No. E31780

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AOC, L.L.C., 4620 North Galloway Road, Lakeland, Polk County, Florida, 33810. NPDES #FL0029653. Effluent grab samples for biological and chemical analyses for this facility were collected on December 17, 2012.

Introduction

AOC, L.L.C. is a polyester resin manufacturing company. The wastewater from this facility is once-through non-contact water that passes through a mixing basin and subsequently discharges into a holding pond where it is combined with cooling tower blowdown prior to off-site discharge. (See Appendix F for detailed facility information provided by Peter Wenner of FDEP Southwest District.)

Methods

Samples were collected from the EFF-1 NPDES sampling point for Outfall D-001 by Peter Wenner (FDEP Southwest District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling. All DEP SOPs are available on the web at: http://www.dep.state.fl.us/water/sas/sop/index.htm.

See Appendix A for the completed chain of custody form.

The 96-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.dep.state.fl.us/labs/library/lab_sops.htm.

Results and Discussion

- **Toxicity Test Results**
  Tests were performed December 18 - 22, 2012.

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

  Pimephales promelas 96-hour acute screening bioassay – LC_{50} > 100%, 0%* mortality in 100% sample at 96 hours

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

  *NOTE: In a 96-hour acute screening 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.

- **Algal Growth Potential**
  The effluent Algal Growth Potential (AGP) was 1.44 AJ mg dry wt/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. The result is estimated (J-qualified) due to an instrument malfunction during algal growth. The lights were out for an unknown period of time (<24 hours). Raschke and Schultz (1987) determined that AGP values above 5.0 mg dry weight/L represent a "problem" threshold for fresh receiving waters, implying nutrient enrichment. The analytical chemistry suggests that the effluent is phosphorus limited (Miller et al. 1978).

See Table 1 for AGP results and qualifiers.

- **Chemistry Results**
  Total residual chlorine and total ammonia were not detected in the bioassay sample in the laboratory. Total ammonia was also undetected in the effluent grab sample. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was < 0.02 mg/L.

  Arsenic and selenium were detected in the effluent at levels that comply with Class III Freshwater Quality Criteria (62-302.530, F.A.C.). Nickel was detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL). The effluent's dissolved oxygen, pH, and conductivity complied with Class III Freshwater Criteria and/or permitted limits. Carbonaceous Biochemical Oxygen Demand (CBOD) of the effluent sample was detected between the MDL and PQL and complied with permit limits.

  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 sample collected from the EFF-1 NPDES sampling point for Outfall D-001 this facility on December 17, 2012, was not acutely toxic to either test species during the 96-hour acute screening bioassays. Although the effluent AGP result was less than the "problem" threshold for fresh receiving waters, the result is estimated due to lighting malfunction during algal growth. Effluent water quality samples collected on December 17, 2012, did not exceed any applicable water quality standards or violate any permit conditions.

Literature Cited

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

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

Table 1. Measured and predicted algal growth potential (AGP; mg dry weight/L) for ortho-phosphate (OP) and total phosphorus (TP) limitation of the freshwater species *Pseudokirchneriella subcapitata* and ratios of nitrogen to phosphorus for samples collected from AOC, L.L.C. on December 17, 2012

AOC, L.L.C. NPDES#FL0029653					
Location	AGP (measured)	Predicted AGP (OP) ± 20%	Predicted AGP (TP) ± 20%	Inorganic N:P ratio	Total N:P ratio
Effluent	1.44 AJ	6.5 ± 1.3	6.9 ± 1.4	28.7	31.8

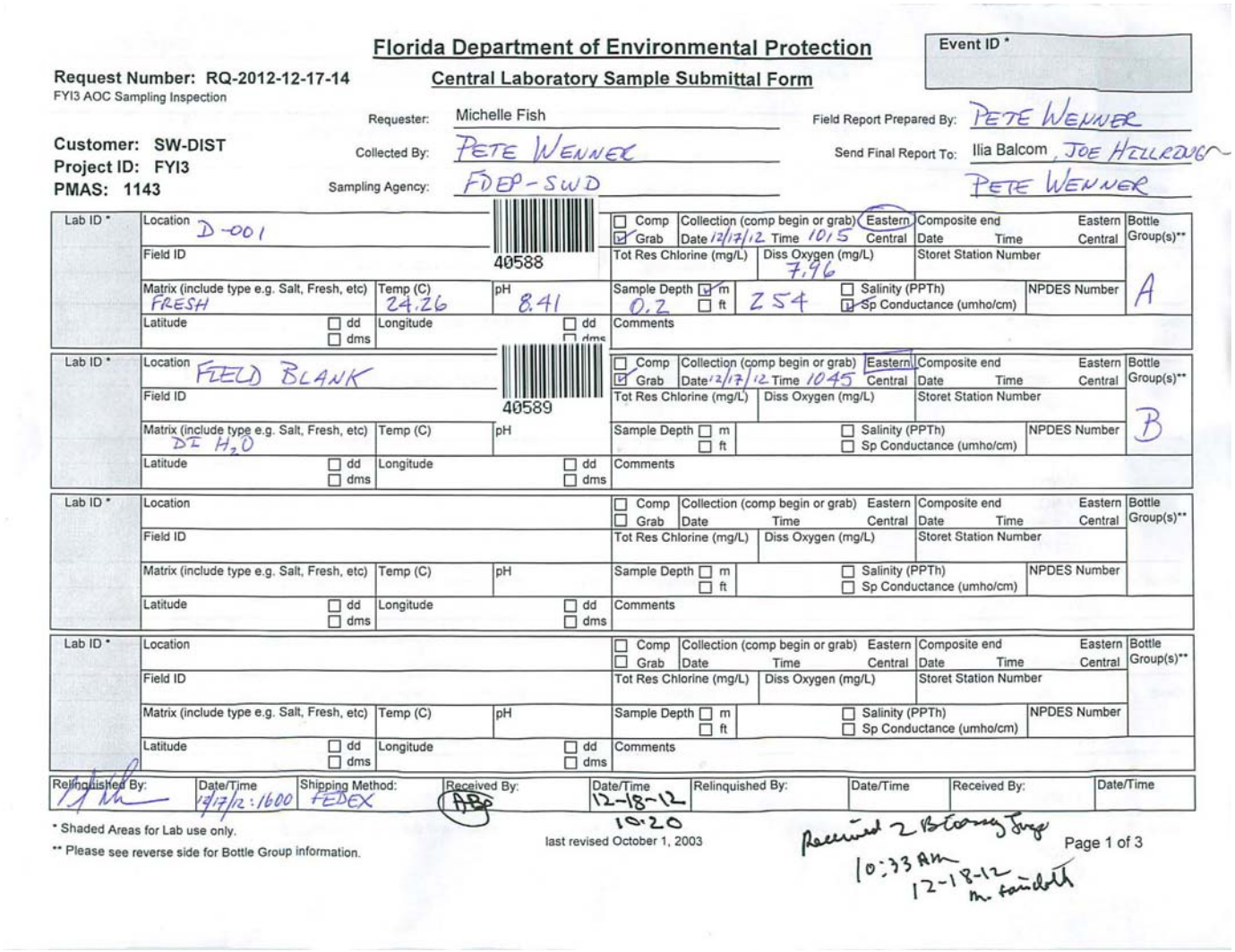
A - Value reported is the mean of two or more determinations
J - Estimated value; An instument malfunction occurred during analysis. The lights were out for an unknown period of time < 24 hours during algal growth.

Table 2. Effluent limits, Class III Freshwater Criteria and chemical data for samples collected from AOC, L.L.C. on December 17, 2012

AOC, L.L.C. NPDES #FL0029653	Class III Criteria	Effluent Limits	Effluent	
Organic Constituents (µg/L)				
None Detected	-	-	None Detected	
Metals (µg/L unless otherwise noted)				
Aluminum	-	-	5.0	U
Antimony	≤ 4,300	-	0.25	U
Arsenic	≤ 50	-	1.77	
Beryllium	≤ 0.13 a	-	0.025	U
Cadmium	≤ 0.3 b	-	0.050	U
Calcium (mg/L)	-	-	38.1	
Chromium-III	≤ 102 b	-	0.30	U
Copper	≤ 11.1 b	-	0.50	U
Iron	≤ 1,000	-	30	U
Lead	≤ 4.1 b	-	0.20	U
Magnesium (mg/L)	-	-	6.58	
Nickel	≤ 61.8 b	-	0.28	I
Selenium	≤ 5.0	-	1.82	
Silver	≤ 0.07	-	0.025	U
Zinc	≤ 142 b	-	5.0	U
Nutrients (mg/L)				
Ortho-phosphate	-	-	0.015	
Total Phosphorus	-	-	0.016	
Total Ammonia	-	Report	0.010	U
Un-ionized Ammonia	≤ 0.02 s	≤ 0.02	< 0.02	c
Nitrate and Nitrite	-	-	0.42	
Total Kjeldahl Nitrogen	-	-	0.088	I
Organic Nitrogen	-	-	0.083	c
Total Nitrogen	-	-	0.508	c
General Physical and Chemical Parameters				
Dissolved Oxygen (mg/L)	≥ 5.0	≥ 5.0	8.0	
pH (SU)	6.0 - 8.5	6.0 - 8.5	8.4	J
Conductivity (µmhos/cm)	≤ 1,275	-	254	
Temperature (°C)	-	Report	24.3	
Sample Depth (m)	-	-	0.2	
Total Residual Chlorine (mg/L)	≤ 0.01	≤ 0.01	≤ 0.03	UQ£
Chlorophyll *a* (µg/L) - Corrected	-	-	1.1	I
Phaeophytin (µg/L)	-	-	0.50	U
Total Suspended Solids (mg/L)	-	≤ 10.0	2	U
CBOD, 5 day (mg/L), N - inhibited	-	≤ 10.0	0.79	I
Sulfate (mg/L)	-	Report	7.1	
Flow (MGD)	-	Report	0.225	
Hardness (mg $CaCO_3$)	-	-	122 c	

"-" Sample/measurement was not collected or criterion/limit does not exist
a - Annual average
b - Value is calculated based on hardness
c - Value is calculated
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J - Estimated value; pH failed post sampling calibration.
Q - Sample held beyond normal holding time
U - Material analyzed for but not detected; value reported is the method detection limit
£ - measurement taken in the FDEP laboratory
L - Actual value is known to be greater than value given (appears in Appendix E)

Appendix A. Chain of Custody Form



Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2012-12-17-14
FYI3 AOC Sampling Inspection

Requester: Michelle Fish

Field Report Prepared By: PETE WENNER

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

Collected By: PETE WENNER

Sampling Agency: FDEP-SWD

Send Final Report To: Ilia Balcom, JOE HELLRUNG, PETE WENNER

Lab ID *	Location / Field ID	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Latitude / Longitude	Collection (comp begin or grab) / Composite end	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Sample Depth	Salinity (PPTh) / Sp Conductance (umho/cm)	NPDES Number	Comments	Bottle Group(s)**
40588	D-001	FRESH	24.26	8.41	dd / dms	Grab Date 12/17/12 Time 1015 Eastern Central		7.96	0.2 m	Sp Conductance 254			A
40589	FIELD BLANK	DI H_2O			dd / dms	Grab Date 12/17/12 Time 1045 Eastern Central							B
					dd / dms	Comp / Grab Date Time Eastern Central			m / ft	Salinity (PPTh) / Sp Conductance (umho/cm)			
					dd / dms	Comp / Grab Date Time Eastern Central			m / ft	Salinity (PPTh) / Sp Conductance (umho/cm)			

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
	12/17/12:1600	FEDEX	ABP	12-18-12 10:20				

* Shaded Areas for Lab use only.

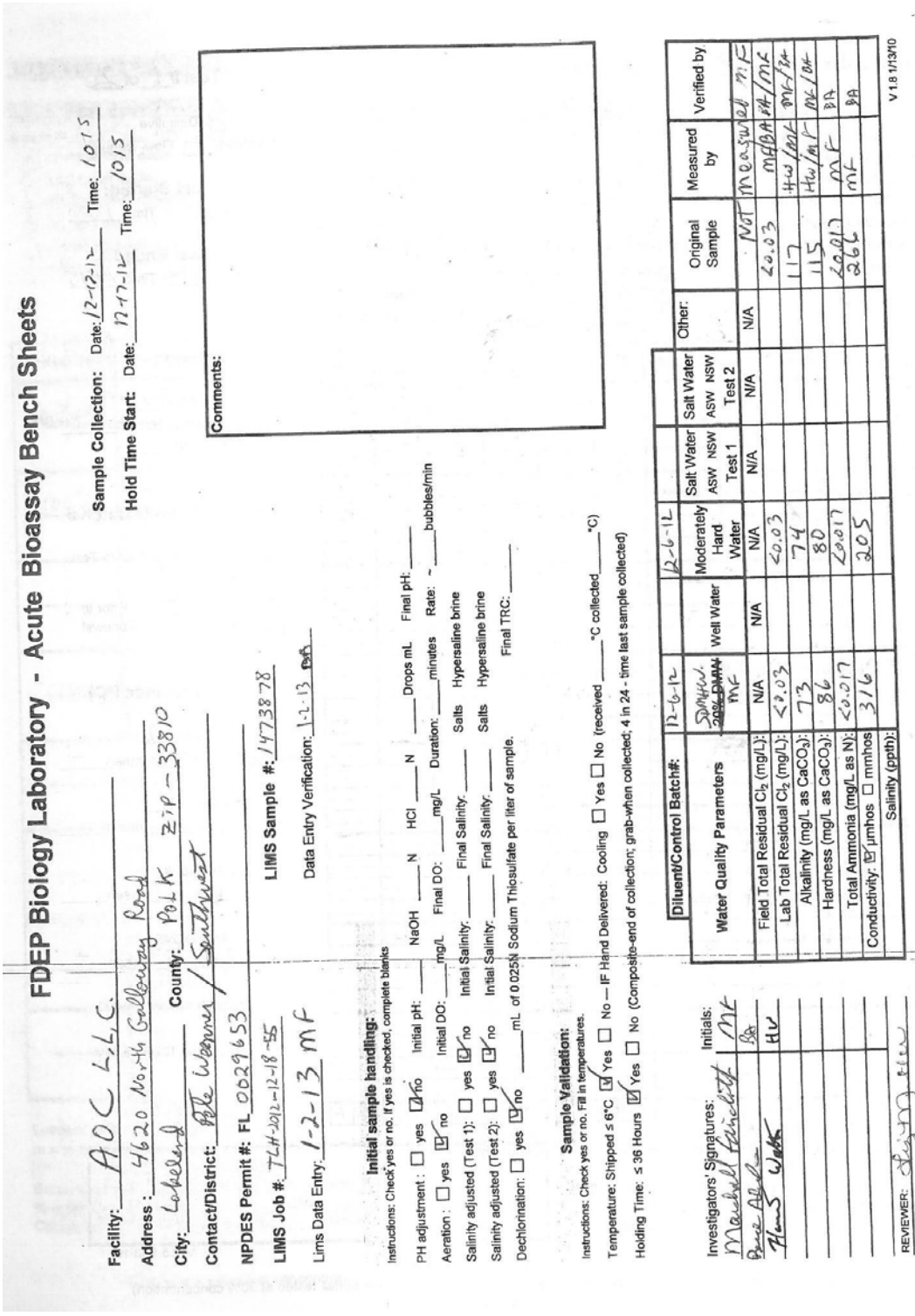
** Please see reverse side for Bottle Group information.

last revised October 1, 2003

Received 2 Bl Canary Jugs 10:33 AM 12-18-12 M. Faircloth

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Appendix B. Bench Sheets



FDEP Biology Laboratory - Acute Bioassay Bench Sheets

Facility: AOC L.L.C.
Address: 4620 North Gallberry Road
City: Lakeland County: Polk Zip - 33810
Contact/District: Pete Wagner / Southwest
NPDES Permit #: FL 0029653
LIMS Job #: TLH-20121218-55
Lims Data Entry: 1-2-13 MF

Sample Collection: Date: 12-12-12 Time: 1015
Hold Time Start: Date: 12-12-12 Time: 1015

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:
Maribell Echeverria ME
Bruce Allen BA
Hans Weber HW

Diluent/Control Batch#:		12-6-12		12-6-12						
Water Quality Parameters	Dilution Water 20% DMW MF	Well Water	Moderately Hard Water	Salt Water ASW NSW Test 1	Salt Water ASW NSW Test 2	Other:	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	MF
Lab Total Residual Cl_2 (mg/L):	<0.03		<0.03				<0.03	MF/BA	MF/ME
Alkalinity (mg/L as $CaCO_3$):	73		74				117	HW/MF	ME/BA
Hardness (mg/L as $CaCO_3$):	86		80				115	HW/MF	ME/BA
Total Ammonia (mg/L as N):	<0.017		<0.017				<0.017	MF	BA
Conductivity: ☑ µmhos ☐ mmhos	316		205				266	MF	BA
Salinity (ppth):									

REVIEWER: Angela Rees

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FDEP Biology Laboratory - Bioassay Survival Bench Sheet

Test # 1 **of** 2

LIMS Sample # 1473878   **SOP#: TA 07_** 01

Test Species:
Batch #: 12-18-12 **Age:** <24hrs
- ☑ *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 # 12-6-12**)** mf
- ☐ ASW ☑ ~~20% DMW~~ SDMHW
- ☐ MHW ☐ Well

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

Test Duration:
☐ 48 hr
☑ 96 hr
☐ __hr

Chamber Size 30 **ml**
Test Volume: 20 **ml**

Test Started: Date 12-18-12 Time 1230

Test Ended: Date 12-22-12 Time 1045

Concentration	Replicate	Chamber #	Test Hour: 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Control	A	1	5	5	5	5	5	5
	B	2	5	5	5	5	5	5
	C	3	5	5	5	5	5	5
	D	4	5	5	5	5	5	5
100%	A	5	5	5	5	5	5	5
	B	6	5	5	5	5	5	5
	C	7	5	5	5	5	5	5
	D	8	5	5	5	5	5	5
		Checked or Verified by:	BA	MF	MF	MF	MF	MF

Food
- ☑ YCT Batch# 11-14-12
- ☑ P. subcapitata Batch# 10-31-12
- ☐ Artemia Lot#______

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

Temperature Range (°C)

Incubator # 2
min. 25.3 max. 26.5 mean —

Incubator #___
min.______max.______mean______

Waterbath #___
min.______max.______mean______

Room B246
min. 24.2 max. 25.3 mean —

Light intensity (ft. candles): 50-100

Photoperiod (hours): 16 light, 8 dark

Loaded/ Verified by: MF, BA

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______

Comments:

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

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample # 1473878   SOP#: TA 07 02   Test # 2 of 2

Test Species:
Batch #: 12-18-12 Age: 9 day
- ☐ *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 # 12-6-12)
☐ ASW ☐ 20% DMW
☑ MHW ☐ Well

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

Test Duration: ☐ 48 hr ☑ 96 hr ☐ __hr

Chamber Size 1000 ml
Test Volume: 500 ml

Test Started: Date 12-18-12 Time 1215 MF
Test Ended: Date 12-22-12 Time 1100

Concentration	Replicate	Chamber #	0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Control	A	E16	5	5	5	5	5	5
	B	E17	5	5	5	5	5	5
	C	E18	5	5	5	5	5	5
	D	E19	5	5	5	5	5	5
100%	A	E20	5	5	5	5	5	5
	B	E21	5	5	5	5	5	5
	C	E22	5	5	5	5	5	5
	D	E23	5	5	5	5	5	5
Checked or Verified by:			MF	MF	MF	MF	MF	MF

Food
- ☐ YCT Batch#____
- ☐ P. subcapitata Batch#____
- ☑ Artemia Lot# 08813

Feeding and Artemia Batch #
- ☑ 0 hr 169-12 ☑ Prior to Test
- ☐ 24 hr____
- ☑ 48 hr 170-12 ☑ Prior to Renewal
- ☐ 72 hr____

Temperature Range (°C)

Incubator # 2
min. 25.3 max. 26.5 mean —

Incubator #___
min.____ max.____ mean____

Waterbath #___
min.____ max.____ mean____

Room B246
min. 24.2 max. 25.3 mean —

Light intensity (ft. candles): 50-100

Photoperiod (hours): 16 light, 8 dark

Loaded/ Verified by: BH / MC
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______

Comments:

V. 2.5 1-13-10

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

FDEP Biology Laboratory - Bioassay Parameter Sheet

LIMS Sample # 1473878 Test # 1 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)
	M	0 hr	8.0	24.8	7.7	316	
		24 hr					
Control	A	48 hr BR	8.1	24.7	8.1	339	
	M	48 hr AR	8.1	24.6	7.5	318	
		72 hr					
	A	96 hr	7.9	25.2	7.3	353	
	M	0 hr	7.8	25.3	8.6	266	
		24 hr					
100%	A	48 hr BR	8.1	24.8	7.7	266	
	M	48 hr AR	8.0	25.6	8.3	266	
		72 hr					
	A	96 hr	7.9	25.0	7.7	296	
		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					
		0 hr					
		24 hr					
		48 hr BR					
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		72 hr					
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		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
		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: MF
24 hr:
48 hr BR: MF
48 hr AR: MF
72 hr:
96 hr: MF

FDEP Biology Laboratory - Bioassay Parameter Sheet

LIMS Sample # 1473878 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)
Control	A	0 hr	8.0	24.4	7.7	305	
	B	24 hr	8.0	25.2	7.8	324	
	C	48 hr BR	8.1	25.6	7.2	321	
	C	48 hr AR	8.1	24.7	7.5	316	
	D	72 hr	8.0	25.7	5.9	323	
		96 hr	7.9	25.8	6.3	353	
100%	A	0 hr	7.8	25.3	8.6	266	
	B	24 hr	8.0	25.5	7.5	283	
	C	48 hr BR	8.0	25.7	7.0	277	
	C	48 hr AR	8.0	25.3	7.6	280	
	D	72 hr	7.9	25.8	6.0	277	
		96 hr	7.7	25.6	5.8	304	
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
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		96 hr					
		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: MF
24 hr: MF
48 hr BR: MF
48 hr AR: MF
72 hr: MF
96 hr: MF

V. 2.3 1-13-10

Test ID: AQC LLC. Dates: 12-18-12 — 12-22-12

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

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

Insert other device information in blank spaces(if used).

Test ID = Facility or SRTs (acute SRT–Chronic SRT)

entered by M. Faircloth 12-22-12

V 1.1 9/21/10 MF/jd

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Appendix C. SRT Bench Sheets and Statistical Analysis

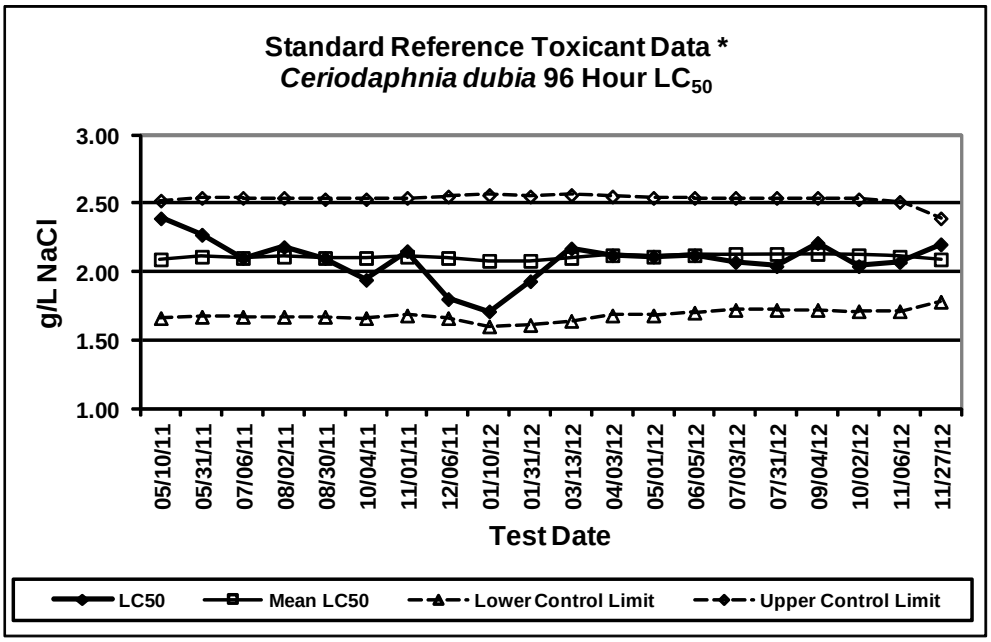
Florida Department of Environmental Protection
Bureau of Laboratories

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

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
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
08/30/11	2.10	2.10	0.22	1.67	2.53
10/04/11	1.94	2.10	0.22	1.66	2.53
11/01/11	2.15	2.11	0.22	1.68	2.54
12/06/11	1.80	2.10	0.22	1.66	2.55
01/10/12	1.71	2.08	0.24	1.60	2.56
01/31/12	1.93	2.08	0.24	1.61	2.55
03/13/12	2.17	2.10	0.23	1.64	2.56
04/03/12	2.12	2.12	0.22	1.68	2.55
05/01/12	2.11	2.11	0.22	1.68	2.54
06/05/12	2.12	2.12	0.21	1.70	2.54
07/03/12	2.07	2.13	0.21	1.72	2.54
07/31/12	2.04	2.13	0.20	1.72	2.54
09/04/12	2.21	2.13	0.21	1.72	2.54
10/02/12	2.04	2.12	0.20	1.71	2.53
11/06/12	2.07	2.11	0.20	1.71	2.51
11/27/12	2.20	2.09	0.15	1.78	2.39

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

CV = 7.39
EPA reference 75th quartile CV = 29%



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
- ☑ *Ceriodaphnia dubia* Method 2002.0 TA07.01
- ☐ *Menidia Beryllina* Method 2006.0 TA07.04
- ☐ *Cyprinella leedsi* Method 2000.0 TA07.02
- ☐ *Hyalella azteca* Method 100.1 EPA-600-R-99-064
- ☐ *Pimephales promelas* Method 2000.0 TA07.02

Test Type: ☐ non-renewal ☑ renewal

Test Page 1 of 2

Diluent/ Batch #: SD MHW 111-16-12
Toxicant/ Batch#: NaCl 111-26-12
Organism Batch: 11-27-12 Age: <24hrs
Test Beginning: Date: 11-27-12 Time: 1100
Test Ending: Date: 12-1-12 Time: 0945

Water Quality Parameters:	Diluent	SOP	Initials
Total Residual Cl_2 (mg/L):	<0.03	TA06_22	MF
Alkalinity (mg/L as $CaCO_3$):	81	TA06_08	HW
Hardness (mg.L as $CaCO_3$):	92	TA06_09	HW
Total Ammonia (mg/L as N):	<0.017	TA06_17	MF
Conductivity: (µmhos) mmhos	324	TA06_25	MF
Salinity (ppth):		TA06_25	

Food:	Batch
☑ YCT	11-14-12
☑ *P. subcapitata*	10-31-12
☐ Artemia Lot #	

Artemia Batch:

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

Chamber size: 30 mL
Test volume: 20 mL per replicate

Concentrations prepared by: MF
Test Incubated in: Incubator # 2 Waterbath # ____
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark

Temperature Range °C:(if used)
Incubator # 2 min. 25.1 max. 25.9 mean. —
Waterbath # ___ min. ____ max. ____ mean. ____
Room B246 min. 25.1 max. 25.4 mean. —

Feeding: √ as needed

☑ Before test
☐ 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	1	5	5	5	5	5	5
	B	2	5	5	5	5	5	5
	C	3	5	5	5	5	5	5
	D	4	5	5	5	5	5	5
1.5	A	5	5	5	5	5	5	5
	B	6	5	5	2 3D	2	2	2
	C	7	5	5	5	5	5	4 1P
	D	8	5	5	5	5	5	5
2.0	A	9	5	5	5	5	5	5
	B	10	5	5	5	5	5	4 1P
	C	11	5	5	5	5	5	4 1D
	D	12	5	5	4 1D	4	4	4
2.5	A	13	5	5	4 1D	4	1 3D	0 1D
	B	14	5	4 1D	1 MD 3D	1	1	1
	C	15	5	2 3D	1 1D	1	0 1D	—
	D	16	5	5	1 4D	1	0 1P	—
3.0	A	17	5	4 1D	0 4D	—		
	B	18	5	5	0 5D	—		
	C	19	5	1 4D	0 1D	—		
	D	20	5	3 2D	0 3D	—		
4.0 3.5 MF	A	21	5	0 5D				
	B	22	5	0 5D				
	C	23	5	0 5D				
	D	24	5	0 5D				
Organisms loaded by: MF	Checked by:		MF	BA	MF	MF	BA	BA
Loading Verified by: BA								

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

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

Comments:

Investigators' Signatures
Marshall Faircloth
Hans Wehe

Reviewer: Lisa Milbrew

Method: TSK

Statistics: LC50	95% confidence intervals Lower	Upper
48 hour: —	—	—
96 hour: 3.20	2.13	2.26

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Revised 7/15/2008 mf

TCEQ Biology Laboratory - Acute SOP 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-99-06
- ☑ *Ceriodaphnia dubia* Method 2002.0 TA07.01
- ☐ *Cyprinella leedsi* Method 2000.0 TA07.02
- ☐ *Pimephales promelas* Method 2000.0 TA07.02

Test Beginning: Date: 11-27-12 Time: 1100
Test Ending: Date: 12-1-12 Time: 0945

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	A	0 hr	8.1	24.5	7.8	324	
	—	24 hr	—	—	—	—	
	A	48 hr BR	7.9	24.6	8.1	360	
	m	48 hr AR	7.9	24.5	8.1	324	
	—	72 hr	—	—	—	—	
	A	96 hr	7.4	24.2	7.8	342	
1.5	m	0 hr	8.0	24.6	7.9	2820	
	—	24 hr	—	—	—	—	
	A	48 hr BR	7.9	24.9	8.0	2890	
	m	48 hr AR	7.9	24.9	8.0	3080	
	—	72 hr	—	—	—	—	
	A	96 hr	7.3	24.0	7.6	3110	
2.0	m	0 hr	8.0	24.6	8.0	3720	
	—	24 hr	—	—	—	—	
	A	48 hr BR	7.9	24.9	8.0	3800	
	m	48 hr AR	7.9	24.7	8.1	3780	
	—	72 hr	—	—	—	—	
	A	96 hr	7.4	24.0	7.5	3900	
2.5	m	0 hr	8.0	24.6	7.9	4530	
	—	24 hr	—	—	—	—	
	A	48 hr BR	7.9	24.8	8.0	4620	
	m	48 hr AR	7.9	25.0	8.0	4600	
	—	72 hr	—	—	—	—	
	A	96 hr	7.5	23.6	7.6	4640	
3.0	m	0 hr	8.0	24.6	7.8	5220	
	—	24 hr	—	—	—	—	
		48 hr BR	7.9	24.9	7.9	5360	
		48 hr AR		~~24.7~~ MF not reqd			
		72 hr					
		96 hr					
4.0	m	0 hr	8.0	24.5	7.9	6820	
	A	24 hr	7.2	25.3	7.3	6900	
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					

Investigators Signatures
Marshall Faircloth
Brad Hall
Hans Wolff

Reviewed By: Liz Miller

Measured by:
0 hr: MF
24 hr: BH
48 hr BR: MF
48 hr AR: MF
72 hr: —
96 hr: BH

Measure/record salinity for marine tests

Comments:

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Revised 07/15/2008 MF

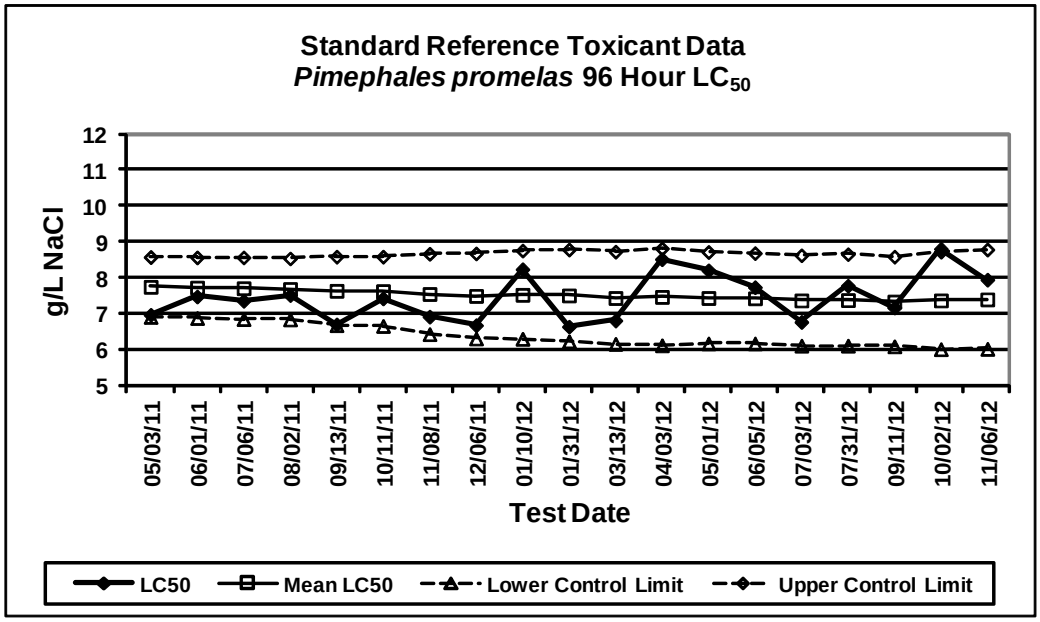
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 96-hour Acute Toxicity
Pimephales promelas (fathead minnow) - Sodium Chloride (NaCl)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
05/03/11	6.96	7.74	0.42	6.9	8.57
06/01/11	7.47	7.72	0.42	6.87	8.56
07/06/11	7.35	7.7	0.43	6.84	8.56
08/02/11	7.51	7.68	0.43	6.83	8.53
09/13/11	6.69	7.63	0.48	6.67	8.58
10/11/11	7.42	7.62	0.48	6.65	8.58
11/08/11	6.91	7.54	0.56	6.42	8.66
12/06/11	6.67	7.49	0.59	6.3	8.67
01/10/12	8.23	7.52	0.61	6.29	8.75
01/31/12	6.63	7.5	0.64	6.22	8.78
03/13/12	6.80	7.43	0.64	6.15	8.72
04/03/12	8.51	7.46	0.68	6.11	8.81
05/01/12	8.20	7.43	0.64	6.16	8.71
06/05/12	7.73	7.42	0.63	6.16	8.68
07/03/12	6.76	7.36	0.63	6.1	8.62
07/31/12	7.77	7.37	0.64	6.1	8.65
09/11/12	7.16	7.33	0.62	6.08	8.58
10/02/12	8.80	7.36	0.68	6	8.72
11/06/12	7.94	7.39	0.69	6.01	8.78
11/27/12	6.41	7.37	0.72	5.92	8.81

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

CV = 9.36
EPA reference 75th quartile CV = 19%



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
- ☐ *Ceriodaphnia dubia* Method 2002.0 TA07.01
- ☐ *Menidia Beryllina* Method 2006.0 TA07.04
- ☐ *Cyprinella leedsi* Method 2000.0 TA07.02
- ☐ *Hyalella azteca* Method 100.1 EPA-600-R-99-064
- ☑ *Pimephales promelas* Method 2000.0 TA07.02

Test Type: ☐ non-renewal ☑ renewal

Test Page 1 of 2

Diluent/ Batch #: MHW 11-27-12
Toxicant/ Batch#: NaCl 10g/L 11-27-12
Organism Batch: 11-27-12 Age: 12 days
Test Beginning: Date: 11-27-12 Time: 1245
Test Ending: Date: 12-1-12 Time: 1000

Water Quality Parameters:	Diluent	SOP	Initials
Total Residual Cl_2 (mg/L):	<0.03	TA06_22	HW
Alkalinity (mg/L as $CaCO_3$):	79	TA06_08	MF
Hardness (mg.L as $CaCO_3$):	87	TA06_09	MF
Total Ammonia (mg/L as N):	<0.017	TA06_17	MF
Conductivity (µmhos) mmhos	298	TA06_25	BA
Salinity (ppth):		TA06_25	

Food:	Batch
☐ YCT	
☐ *P. subcapitata*	
☑ Artemia Lot #	0 8812

Artemia Batch:
0 hr: 153-12
24 hr:
48 hr: 154-12
72 hr:

Chamber size: 1000 mL
Test volume: 500 mL per replicate

Concentrations prepared by: BA
Test Incubated in: Incubator # 2 Waterbath # ____
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark

Temperature Range °C:(if used)
Incubator # 2 min. 25.1 max 25.9 mean —
Waterbath # ___ min. ___ max. ___ mean ___
Room B246 min. 25.1 max 25.4 mean —

Feeding: √ as needed

☑	Before test
☐	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	A1	10	10	10	10	10	10
	B	A2	10	10	10	10	10	10
5	A	A3	10	10	10	10	10	10
	B	A4	10	10	10	10	10	10
6	A	A5	10	10	10	10	9 1D	8 1D
	B	A6	10	10	10	10	9 1D	9
7	A	A7	10	9 1D	4 5D	4	2 2D	0 3D
	B	A8	10	10	6 4D	6	2 4D	2
8	A	A9	10	2 8D	0 7D	—		
	B	A10	10	6 4D	0 6D	—		
10	A	A11	10	0 10D	—	—		
	B	A12	10	0 10D	—	—		
Organisms loaded by:		Checked by:	MF	BA	BA	BA	BA	BA

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

Loading Verified by: MF
AR = after renewal
m = missing d = dead BR = before renewal hr = hour

Investigators' Signatures
Marshall Faircloth
Brian Aberdeen
Hans Walker

Reviewer: Liz Miller

Comments:

Method: TSK

Statistics: LC50	95% confidence intervals Lower	Upper
48 hour: —	—	—
96 hour: 6.41	6.20	6.63

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Revised 7/15/2008 mf

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
- ☐ *Ceriodaphnia dubia* Method 2002.0 TA07.01
- ☐ *Menidia Beryllina* Method 2006.0 TA07.04
- ☐ *Cyprinella leedsi* Method 2000.0 TA07.02
- ☐ *Hyalella azteca* Method 100.1 EPA-600-R-99-064
- ☑ *Pimephales promelas* Method 2000.0 TA07.02

Test Beginning: Date: 11-27-12 Time: 12:45

Test Ending: Date: 12-1-12 Time: 1200 PM

Test Type: ☐ non-renewal ☑ renewal

hr = hour AR = after renewal BR = before renewal

Concentration µg/L mg/L %	Replicate	Test Hour	pH (SU)	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity ☐ µmhos ☑ mmhos	Salinity (ppth)
Control	A	0 hr	7.2	24.6	7.5	0.298	
	B	24 hr	7.3	25.9	7.2	0.302	
	A	48 hr BR	7.3	24.8	7.4	0.314	
	A	48 hr AR	7.2	24.1	7.6	0.303	
	B	72 hr	7.2	25.2	5.8	0.311	
	A	96 hr	7.1	25.3	7.6	0.320	
5	A	0 hr	7.1	24.4	7.5	9.57	
	B	24 hr	7.2	25.2	7.1	9.45	
	A	48 hr BR	7.2	25.2	7.2	9.89	
	A	48 hr AR	7.1	24.9	7.4	9.52	
	B	72 hr	7.1	24.9	6.3	9.59	
	A	96 hr	7.1	24.9	7.5	9.91	
6	A	0 hr	7.2	24.3	7.4	11.4	
	B	24 hr	7.2	25.4	7.0	11.2	
	A	48 hr BR	7.3	24.3	7.2	11.8	
	A	48 hr AR	7.2	24.8	7.3	11.4	
	B	72 hr	7.2	24.8	6.3	11.5	
	A	96 hr	7.1	24.9	7.4	11.8	
7	A	0 hr	7.2	24.2	7.6	12.8	
	B	24 hr	7.3	25.3	7.1	12.5	
	A	48 hr BR	7.3	24.8	7.2	13.1	
	A	48 hr AR	7.2	24.6	7.2	13.0	
	B	72 hr	7.2	24.7	6.4	13.1	
	A	96 hr	7.1	24.8	7.1	13.4	
8	A	0 hr	7.2	24.1	7.1	14.7	
	B	24 hr	7.3	25.4	7.1	14.5	
	A	48 hr BR	7.3	25.4	7.2	15.5	
		48 hr AR					
		72 hr					
		96 hr					
10	A	0 hr	7.2	24.0	7.3	18.5	
	B	24 hr	7.3	25.5	7.1	17.9	
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					

Investigators Signatures

Bruce Alexander

Marshall Faircloth

Hans Walk

Reviewed By: Liz Miller

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

Measure/record salinity for marine tests

Comments:

Revised 07/15/2008 MF

Appendix D. Test Organism Receipt

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Shipping Date: 11/26/12

Ship to: FDEP

P.O. No: _____

Species	Quantity	Age	Brood/Lot Number	Temp. (°C)	pH (S.U.)	Salinity (‰)
Mysidopsis bahia						
Menidia beryllina						
						Hardness mg/L
Cyprinella leedsi	150 ac	12 DAYS	C-2 12 11 14	25	7.8	80
Pimephales promelas	150 ac	7 DAYS	FM 12 11 14	25	7.8	80
Ceriodaphnia dubia						
Daphnia magna						
YCT						
P. subcapitata						

Packed by: PM

Shipped Via: Fed Ex

Notes: _____

Thank you for your order.

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

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Shipping Date: 12/17/12

Ship to: FDEP

P.O. No: _____

Species	Quantity	Age	Brood/Lot Number	Temp. (°C)	pH (S.U.)	Salinity (‰)
Mysidopsis bahia						
Menidia beryllina						
						Hardness mg/L
Cyprinella leedsi						
Pimephales promelas	100 ac	8DAYS	FM 121209	25	7.8	80
Ceriodaphnia dubia						
Daphnia magna						
YCT						
P. subcapitata						

Packed by: PM

Shipped Via: Fed Ex

Notes: _____

Thank you for your order.

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

Appendix E. Chemical Analyses performed on the effluent from the AOC, L.L.C. Plant Outfall D-001, sampled on December 17, 2012.

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
12/17/2012 10:15	FY13 AOC D-001	AGP/LN	Algal Growth Potential	1.44	AJ	mg DryWt/L	0.3	0.9
12/17/2012 10:15	FY13 AOC D-001	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	0.79	I	mg/L	0.2	2
12/17/2012 10:15	FY13 AOC D-001	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	1.1	I	ug/L	0.69	2.1
12/17/2012 10:15	FY13 AOC D-001	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.5	U	ug/L	0.5	1.5
12/17/2012 10:15	FY13 AOC D-001	Field Parameter	Dissolved Oxygen	7.96		mg/L		
12/17/2012 10:15	FY13 AOC D-001	Field Parameter	pH	8.41				
12/17/2012 10:15	FY13 AOC D-001	Field Parameter	Sample Depth	0.2		m		
12/17/2012 10:15	FY13 AOC D-001	Field Parameter	Specific Conductance	254		umhos/cm		
12/17/2012 10:15	FY13 AOC D-001	Field Parameter	Temperature	24.26		C		
12/17/2012 10:15	FY13 AOC D-001	Metals	Aluminum	5	U	ug/L	5	20
12/17/2012 10:15	FY13 AOC D-001	Metals	Antimony	0.25	U	ug/L	0.25	1
12/17/2012 10:15	FY13 AOC D-001	Metals	Arsenic	1.77		ug/L	0.25	1
12/17/2012 10:15	FY13 AOC D-001	Metals	Beryllium	0.025	U	ug/L	0.025	0.1
12/17/2012 10:15	FY13 AOC D-001	Metals	Cadmium	0.05	U	ug/L	0.05	0.2
12/17/2012 10:15	FY13 AOC D-001	Metals	Calcium	38.1		mg/L	0.075	0.3
12/17/2012 10:15	FY13 AOC D-001	Metals	Chromium	0.3	U	ug/L	0.3	1.2
12/17/2012 10:15	FY13 AOC D-001	Metals	Copper	0.5	U	ug/L	0.5	1
12/17/2012 10:15	FY13 AOC D-001	Metals	Iron	30	U	ug/L	30	120
12/17/2012 10:15	FY13 AOC D-001	Metals	Lead	0.2	U	ug/L	0.2	0.8
12/17/2012 10:15	FY13 AOC D-001	Metals	Magnesium	6.58		mg/L	0.04	0.16
12/17/2012 10:15	FY13 AOC D-001	Metals	Nickel	0.28	I	ug/L	0.25	1
12/17/2012 10:15	FY13 AOC D-001	Metals	Selenium	1.82		ug/L	0.2	0.8
12/17/2012 10:15	FY13 AOC D-001	Metals	Silver	0.025	U	ug/L	0.025	0.1
12/17/2012 10:15	FY13 AOC D-001	Metals	Zinc	5	U	ug/L	5	20
12/17/2012 10:15	FY13 AOC D-001	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
12/17/2012 10:15	FY13 AOC D-001	Nutrients	Kjeldahl Nitrogen	0.088	I	mg N/L	0.08	0.2
12/17/2012 10:15	FY13 AOC D-001	Nutrients	NO2NO3-N	0.42		mg N/L	0.004	0.01
12/17/2012 10:15	FY13 AOC D-001	Nutrients	O-Phosphate-P	0.015		mg P/L	0.004	0.01
12/17/2012 10:15	FY13 AOC D-001	Nutrients	Sulfate	7.1		mg SO4/L	0.2	0.5
12/17/2012 10:15	FY13 AOC D-001	Nutrients	Total-P	0.016		mg P/L	0.002	0.005

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
12/17/2012 10:15	FY13 AOC D-001	Nutrients	TSS	2	U	mg/L	2	10
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Alachlor	0.3	U	ug/L	0.3	1.2
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Atrazine	0.05	U	ug/L	0.05	0.2
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Azinphos Methyl	0.1	UJ	ug/L	0.1	0.4
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Bromacil	0.2	U	ug/L	0.2	0.8
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Butylate	0.1	U	ug/L	0.1	0.4
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Chlorpyrifos Methyl	0.05	U	ug/L	0.05	0.2
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Diazinon	0.05	U	ug/L	0.05	0.2
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Ethoprop	0.025	U	ug/L	0.025	0.1
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Fenamiphos	0.15	UJ	ug/L	0.15	0.6
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Fonofos	0.05	U	ug/L	0.05	0.2
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Hexazinone	0.15	U	ug/L	0.15	0.6
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Malathion	0.05	U	ug/L	0.05	0.2
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Metalaxyl	0.2	U	ug/L	0.2	0.8
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Metolachlor	0.3	U	ug/L	0.3	1.2
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Metribuzin	0.1	U	ug/L	0.1	0.4
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Mevinphos	0.05	U	ug/L	0.05	0.2
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Naled	0.2	U	ug/L	0.2	0.8
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Norflurazon	0.15	UJ	ug/L	0.15	0.6
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Parathion Ethyl	0.1	U	ug/L	0.1	0.4
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Parathion Methyl	0.05	U	ug/L	0.05	0.2
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Phorate	0.025	U	ug/L	0.025	0.1
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Prometryn	0.1	U	ug/L	0.1	0.4
12/17/2012 10:15	FY13 AOC D-001	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.98	U	ug/L	0.98	3.9
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.98	U	ug/L	0.98	3.9
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	2,4-Dichlorophenol	0.98	U	ug/L	0.98	3.9
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	2,4-Dimethylphenol	9.8	U	ug/L	9.8	39
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	2,4-Dinitrophenol	15	U	ug/L	15	59

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	2,4-Dinitrotoluene	0.98	U	ug/L	0.98	3.9
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	2,6-Dinitrotoluene	0.98	U	ug/L	0.98	3.9
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	2-Chloronaphthalene	0.98	U	ug/L	0.98	3.9
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	2-Chlorophenol	0.98	U	ug/L	0.98	3.9
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9	U	ug/L	2.9	12
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	2-Nitrophenol	0.98	U	ug/L	0.98	3.9
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	3,3'-Dichlorobenzidine	39	U	ug/L	39	160
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.98	U	ug/L	0.98	3.9
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.98	U	ug/L	0.98	3.9
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2	U	ug/L	2	7.8
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	59
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Acenaphthene	0.2	U	ug/L	0.2	0.78
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Acenaphthylene	0.2	U	ug/L	0.2	0.78
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Anthracene	0.2	U	ug/L	0.2	0.78
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Benzidine	98	U	ug/L	98	390
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Benzo(a)anthracene	0.2	U	ug/L	0.2	0.78
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Benzo(a)pyrene	0.2	U	ug/L	0.2	0.78
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Benzo(b)fluoranthene	0.2	U	ug/L	0.2	0.78
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.2	U	ug/L	0.2	0.78
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Benzo(k)fluoranthene	0.2	U	ug/L	0.2	0.78
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.98	U	ug/L	0.98	3.9
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.98	U	ug/L	0.98	3.9
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9	U	ug/L	2.9	12
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	15	U	ug/L	15	59
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Butyl benzyl phthalate	4.9	U	ug/L	4.9	20
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Chrysene	0.2	U	ug/L	0.2	0.78
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.2	U	ug/L	0.2	0.78
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Diethyl phthalate	0.98	U	ug/L	0.98	3.9
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Dimethyl phthalate	9.8	U	ug/L	9.8	39
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Di-n-butyl phthalate	4.9	U	ug/L	4.9	20
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Di-n-octyl phthalate	0.98	U	ug/L	0.98	3.9
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Fluoranthene	0.2	U	ug/L	0.2	0.78

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Fluorene	0.2	U	ug/L	0.2	0.78
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Hexachlorobenzene	0.98	U	ug/L	0.98	3.9
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Hexachlorobutadiene	2.9	U	ug/L	2.9	12
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9	U	ug/L	2.9	12
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Hexachloroethane	2.9	U	ug/L	2.9	12
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.2	U	ug/L	0.2	0.78
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Isophorone	0.98	U	ug/L	0.98	3.9
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Naphthalene	0.2	U	ug/L	0.2	0.78
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Nitrobenzene	2	U	ug/L	2	7.8
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	N-Nitrosodimethylamine	2	U	ug/L	2	7.8
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2	U	ug/L	2	7.8
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9	U	ug/L	2.9	12
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Pentachlorophenol	2.9	U	ug/L	2.9	12
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Phenanthrene	0.2	U	ug/L	0.2	0.78
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Phenol	0.98	U	ug/L	0.98	3.9
12/17/2012 10:15	FY13 AOC D-001	Priority Organic Pollutants	Pyrene	0.2	U	ug/L	0.2	0.78
12/17/2012 10:15	FY13 AOC D-001	Toxicology	Bioassay-Acute-Screen-FW-C.dubia, LC50	100	L	LC50		
12/17/2012 10:15	FY13 AOC D-001	Toxicology	Bioassay-Acute-Screen-FW-Fish, LC50	100	L	LC50		
12/17/2012 10:45	FIELD BLANK	Metals	Aluminum	5	U	ug/L	5	20
12/17/2012 10:45	FIELD BLANK	Metals	Antimony	0.25	U	ug/L	0.25	1
12/17/2012 10:45	FIELD BLANK	Metals	Arsenic	0.25	U	ug/L	0.25	1
12/17/2012 10:45	FIELD BLANK	Metals	Beryllium	0.025	U	ug/L	0.025	0.1
12/17/2012 10:45	FIELD BLANK	Metals	Cadmium	0.05	U	ug/L	0.05	0.2
12/17/2012 10:45	FIELD BLANK	Metals	Calcium	0.075	U	mg/L	0.075	0.3
12/17/2012 10:45	FIELD BLANK	Metals	Chromium	0.3	U	ug/L	0.3	1.2
12/17/2012 10:45	FIELD BLANK	Metals	Copper	0.5	U	ug/L	0.5	1
12/17/2012 10:45	FIELD BLANK	Metals	Iron	30	U	ug/L	30	120
12/17/2012 10:45	FIELD BLANK	Metals	Lead	0.2	U	ug/L	0.2	0.8
12/17/2012 10:45	FIELD BLANK	Metals	Magnesium	0.04	U	mg/L	0.04	0.16
12/17/2012 10:45	FIELD BLANK	Metals	Nickel	0.25	U	ug/L	0.25	1
12/17/2012 10:45	FIELD BLANK	Metals	Selenium	0.2	U	ug/L	0.2	0.8
12/17/2012 10:45	FIELD BLANK	Metals	Silver	0.025	U	ug/L	0.025	0.1

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
12/17/2012 10:45	FIELD BLANK	Metals	Zinc	5	U	ug/L	5	20
12/17/2012 10:45	FIELD BLANK	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
12/17/2012 10:45	FIELD BLANK	Nutrients	Kjeldahl Nitrogen	0.08	U	mg N/L	0.08	0.2
12/17/2012 10:45	FIELD BLANK	Nutrients	NO2NO3-N	0.004	U	mg N/L	0.004	0.01
12/17/2012 10:45	FIELD BLANK	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
12/17/2012 10:45	FIELD BLANK	Nutrients	Sulfate	0.2	U	mg SO4/L	0.2	0.5
12/17/2012 10:45	FIELD BLANK	Nutrients	Total-P	0.002	U	mg P/L	0.002	0.005
12/17/2012 10:45	FIELD BLANK	Pesticides	Alachlor	0.29	U	ug/L	0.29	1.2
12/17/2012 10:45	FIELD BLANK	Pesticides	Ametryn	0.049	U	ug/L	0.049	0.19
12/17/2012 10:45	FIELD BLANK	Pesticides	Atrazine	0.049	U	ug/L	0.049	0.19
12/17/2012 10:45	FIELD BLANK	Pesticides	Azinphos Methyl	0.097	U	ug/L	0.097	0.39
12/17/2012 10:45	FIELD BLANK	Pesticides	Bromacil	0.19	U	ug/L	0.19	0.78
12/17/2012 10:45	FIELD BLANK	Pesticides	Butylate	0.097	U	ug/L	0.097	0.39
12/17/2012 10:45	FIELD BLANK	Pesticides	Chlorpyrifos Ethyl	0.049	U	ug/L	0.049	0.19
12/17/2012 10:45	FIELD BLANK	Pesticides	Chlorpyrifos Methyl	0.049	U	ug/L	0.049	0.19
12/17/2012 10:45	FIELD BLANK	Pesticides	Diazinon	0.049	U	ug/L	0.049	0.19
12/17/2012 10:45	FIELD BLANK	Pesticides	Ethion	0.049	U	ug/L	0.049	0.19
12/17/2012 10:45	FIELD BLANK	Pesticides	Ethoprop	0.024	U	ug/L	0.024	0.097
12/17/2012 10:45	FIELD BLANK	Pesticides	Fenamiphos	0.15	UJ	ug/L	0.15	0.58
12/17/2012 10:45	FIELD BLANK	Pesticides	Fonofos	0.049	U	ug/L	0.049	0.19
12/17/2012 10:45	FIELD BLANK	Pesticides	Hexazinone	0.15	U	ug/L	0.15	0.58
12/17/2012 10:45	FIELD BLANK	Pesticides	Malathion	0.049	U	ug/L	0.049	0.19
12/17/2012 10:45	FIELD BLANK	Pesticides	Metalaxyl	0.19	U	ug/L	0.19	0.78
12/17/2012 10:45	FIELD BLANK	Pesticides	Metolachlor	0.29	U	ug/L	0.29	1.2
12/17/2012 10:45	FIELD BLANK	Pesticides	Metribuzin	0.097	U	ug/L	0.097	0.39
12/17/2012 10:45	FIELD BLANK	Pesticides	Mevinphos	0.049	U	ug/L	0.049	0.19
12/17/2012 10:45	FIELD BLANK	Pesticides	Naled	0.19	U	ug/L	0.19	0.78
12/17/2012 10:45	FIELD BLANK	Pesticides	Norflurazon	0.15	UJ	ug/L	0.15	0.58
12/17/2012 10:45	FIELD BLANK	Pesticides	Parathion Ethyl	0.097	U	ug/L	0.097	0.39
12/17/2012 10:45	FIELD BLANK	Pesticides	Parathion Methyl	0.049	U	ug/L	0.049	0.19
12/17/2012 10:45	FIELD BLANK	Pesticides	Phorate	0.024	U	ug/L	0.024	0.097
12/17/2012 10:45	FIELD BLANK	Pesticides	Prometryn	0.097	U	ug/L	0.097	0.39

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
12/17/2012 10:45	FIELD BLANK	Pesticides	Simazine	0.049	U	ug/L	0.049	0.19
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.96	U	ug/L	0.96	3.8
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.96	U	ug/L	0.96	3.8
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	2,4-Dichlorophenol	0.96	U	ug/L	0.96	3.8
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	2,4-Dimethylphenol	9.6	U	ug/L	9.6	38
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	2,4-Dinitrophenol	14	U	ug/L	14	58
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	2,4-Dinitrotoluene	0.96	U	ug/L	0.96	3.8
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	2,6-Dinitrotoluene	0.96	U	ug/L	0.96	3.8
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	2-Chloronaphthalene	0.96	U	ug/L	0.96	3.8
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	2-Chlorophenol	0.96	U	ug/L	0.96	3.8
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9	U	ug/L	2.9	12
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	2-Nitrophenol	0.96	U	ug/L	0.96	3.8
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38	U	ug/L	38	150
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.96	U	ug/L	0.96	3.8
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.96	U	ug/L	0.96	3.8
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	U	ug/L	1.9	7.7
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	4-Nitrophenol	14	U	ug/L	14	58
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Acenaphthene	0.19	U	ug/L	0.19	0.77
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Acenaphthylene	0.19	U	ug/L	0.19	0.77
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Anthracene	0.19	U	ug/L	0.19	0.77
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Benzidine	96	U	ug/L	96	380
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Benzo(a)anthracene	0.19	U	ug/L	0.19	0.77
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Benzo(a)pyrene	0.19	U	ug/L	0.19	0.77
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Benzo(b)fluoranthene	0.19	U	ug/L	0.19	0.77
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.19	U	ug/L	0.19	0.77
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Benzo(k)fluoranthene	0.19	U	ug/L	0.19	0.77
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.96	U	ug/L	0.96	3.8
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.96	U	ug/L	0.96	3.8
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9	U	ug/L	2.9	12
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	14	U	ug/L	14	58
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Butyl benzyl phthalate	4.8	U	ug/L	4.8	19
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Chrysene	0.19	U	ug/L	0.19	0.77

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.19	U	ug/L	0.19	0.77
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Diethyl phthalate	0.96	U	ug/L	0.96	3.8
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Dimethyl phthalate	9.6	U	ug/L	9.6	38
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Di-n-butyl phthalate	4.8	U	ug/L	4.8	19
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Di-n-octyl phthalate	0.96	U	ug/L	0.96	3.8
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Fluoranthene	0.19	U	ug/L	0.19	0.77
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Fluorene	0.19	U	ug/L	0.19	0.77
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Hexachlorobenzene	0.96	U	ug/L	0.96	3.8
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Hexachlorobutadiene	2.9	U	ug/L	2.9	12
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9	U	ug/L	2.9	12
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Hexachloroethane	2.9	U	ug/L	2.9	12
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.19	U	ug/L	0.19	0.77
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Isophorone	0.96	U	ug/L	0.96	3.8
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Naphthalene	0.19	U	ug/L	0.19	0.77
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Nitrobenzene	1.9	U	ug/L	1.9	7.7
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	U	ug/L	1.9	7.7
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	U	ug/L	1.9	7.7
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9	U	ug/L	2.9	12
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Pentachlorophenol	2.9	U	ug/L	2.9	12
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Phenanthrene	0.19	U	ug/L	0.19	0.77
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Phenol	0.96	U	ug/L	0.96	3.8
12/17/2012 10:45	FIELD BLANK	Priority Organic Pollutants	Pyrene	0.19	U	ug/L	0.19	0.77

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 x430
Facility Name (as it appears on permit): AOC L.L.C.	**Former Names:** N/A
NPDES Permit Number: FL0029653	**Permit Expiration Date:** September 15, 2013
Physical Address: 4620 North Galloway Road, Lakeland, FL 33810	
District: Southwest	**County:** Polk
Function of Facility: Polyester Resin Manufacturing	
Facility Type: Industrial	**Permitted Capacity (MGD):** 0.8
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): 10/2011-09/2012: 0.241 MGD	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months): N/A	
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):

Sample Point	Description of Monitoring Location
FLW-1	Flow meter located at the point of discharge of the holding pond
EFF-1	After the pond and prior to entering the ditch.

Description of Permitted Outfall(s):

EFFLUENT DISPOSAL:

Surface Water Discharge:

Outfall D-001with a permitted monthly maximum 0.8 MGD design flow rate, which discharges into an unnamed ditch through a wetland to Galloway Lake (Class III Fresh waters). The point of discharge is located approximately at latitude 28° 06' 00" N, longitude 82° 00' 27" W.

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

WASTEWATER TREATMENT:

The once-through non-contact cooling water passes through a mixing basin and subsequently discharges into a holding pond where it is combined with cooling tower blowdown prior to off-site discharge through Outfall 001 at 0.8 MGD monthly maximum design flow rate. The wastewater discharged through Outfall 001 flows to an unnamed ditch which flows under Galloway Road via a wetland and thence to Galloway Lake (Class III fresh water body).

The stormwater runoff generated from the parking lot and the shipping/receiving areas is addressed by the Notice of Intent to Use Multi-Sector Generic Permit for Stormwater Discharge Associated with Industrial Activity (MSGP) adopted under Rule 62-621.300(5), F.A.C., and submitted by the permittee to the NPDES Stormwater Notices Center in Tallahassee.
The MSGP permit number is FLR05F484, which was renewed on 3/8/2007 and expires on 3/7/2012.

Additional waste streams include boiler blowdown, stormwater runoff from the tank farm, and wastewater generated as a result of activation of the fire protection sprinkler system. The waste streams also include wastewater generated from the tanker cleaning area, water softening unit, laboratory and maintenance building sinks, railroad car unloading/loading area, and diesel storage and process areas. All of the above waste streams are collected in a large sump where solids are allowed to settle, the wastewater is then pumped to a 1.2-MG holding/evaporation tank. The wastewater from this tank is circulated through an evaporation system with no discharge to either ground or surface waters of the State. This facility is not required to submit a ground water monitoring plan according to Section 62-522.600(9)(b), F.A.C.

PART I: Continued

List current Effluent Limits of Outfall(s) to be Sampled: This should include any AO or CO limits the facility may be under
(Leave cell blank if not applicable)

	Discharge Limitations			Monitoring Requirements		
Parameters (units)	Monthly Average	Daily Maximum	Daily Minimum	Monitoring Frequency	Sample Type	Sample Point
Flow (MGD)	0.8	Report	--	Continuous	Recorder	FLW-1
Oxygen, Dissolved (DO) (MG/L)	--	--	5.0	Weekly	Grab	EFF-1
Temperature (F), Water (effluent) (DEG.F)	--	Report See I.A.3	--	Monthly	Grab	EFF-1
pH (SU)	--	8.5	6.0	Weekly	Grab	EFF-1
BOD, Carbonaceous 5 day, 20C (MG/L)	--	10.0	--	Quarterly	Grab	EFF-1
Chlorine, Total Residual (MG/L)	--	0.01	--	Weekly	Grab	EFF-1
Sulfate, Total (MG/L)	--	Report	--	Quarterly	Grab	EFF-1
Nitrogen, Ammonia, Total (as N) (MG/L)	--	Report	--	Monthly	Grab	EFF-1
Ammonia, Unionized (MG/L)	--	0.02 See I.A.3	--	Monthly	Calculated	EFF-1
Solids, Total Suspended (MG/L)	--	10.0	--	Quarterly	Grab	EFF-1
Whole Effluent Toxicity (Chronic)	See Permit Condition I.A.4					EFF-1

PART I: Continued

Receiving Waters:	Classification (indicate whether fresh or marine):
Unnamed ditch to wetland to Galloway Lake	Class III Fresh

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

Refer to attached document entitled: AOC tox language

Administrative or Consent Orders (date executed, specific requirements, interim limit dates-if applicable, etc.): N/A

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:

See attached 2007 AOC FYI3 report

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:

Additional Comments (this should include a trend of the Effluent, i.e. if the facility is now Reuse):

AOC Permit #: FL0029653; FYI3 PART II: Sampling Event Information	
Date(s) sample collected: 17 December 2012	**Sampler(s):** Peter Wenner
Temperature (Deg C): 24.26	**pH (SU):** 8.41*
Dissolved Oxygen (mg/L): 7.96	**Conductivity (umhos/cm):** 254
Total Residual Chlorine (mg/L): N/A	**Total Residual Chlorine - after Disinfection (mg/L):** N/A
Method of Chlorination: N/A	**Method of De-chlorination:** N/A
Flow During Sample Collection for each outfall(MGD): D-001: Flow for 12/17/2012 during time of sample collection: 0.225 MGD	
Mean Flow for each outfall for previous 12 months based on sampling date (If samples are taken on more than one day, indicate Mean Flow for each day): D-001 (12/2011-11/2012): 0.221 MGD	
Describe Discharge during Sampling Event: ☒ **Continuous** ☐ **Intermittent** ☐ **Seasonal** ☐ **Rainfall Dependent** ☐ **Other, please specify**	
Describe any conditions, difficulties or abnormal events that occurred during the sample collection and any other additional comments here: *pH passed pre-deployment calibration but failed post calibration. During post-calibration it was determined that pH values were skewing ~0.4 S.U. above both the 7.0 S.U. and 10 S.U. standards. On this basis it was concluded that the actual pH of the effluent was well below the 8.41 S.U. recorded by the YSI sonde at the time of sample collection.	

Appendix G. EPA End Sheet

The Bioassay of AOC, L.L.C. effluent sampled on December 17, 2012. NPDES #FL0029653

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 2 9 6 5 3 11	12 1 2 1 2 1 7	18 B	19 S	20 2

Remarks

66

The Priority Pollutants Analysis of AOC, L.L.C. effluent sampled on December 17, 2012. NPDES #FL0029653

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 2 9 6 5 3 11	12 1 2 1 2 1 7	18 X	19 S	20 2

Remarks

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Biological Analyses of AOC, L.L.C. effluent sampled on December 17, 2012. NPDES #FL0029653

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 2 9 6 5 3 11	12 1 2 1 2 1 7	18 S	19 S	20 2

Remarks

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