

Effluent Quality Assessment

Georgia Pacific Corporation – Palatka Operations

Putnam County

NPDES #FL0002763

Sampled July 6, 2009

September 2009
(Resubmitted March 2011 with corrected tables)

Biology Section
Bureau of Laboratories
Division of Environmental Assessment and Restoration

Quality Manual No. 870346G
NELAC Certification No. E31780

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Georgia Pacific Corporation-Palatka Operations, Highway 216, Palatka, Putnam County, Florida, 32177. NPDES #FL0002763. Effluent samples for bioassay and chemical analyses for this facility were collected on July 6, 2009.

Introduction

Georgia Pacific Corporation-Palatka Operations is a pulp and paper mill which produces both bleached and unbleached pulp and paper utilizing the Kraft process. Products include Kraft paper and finished tissue products. The facility is currently operating under Administrative Order No. 039-NE. (See Appendix F for detailed facility information provided by Heather Webber of FDEP Northeast District.)

Methods

Samples were collected from the EFF-1 NPDES sampling point for Outfall D-001 by Eesa Ali and Sharon Piltz (FDEP Northeast District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling. All DEP SOPs are available on the web at: http://www.floridadep.org/labs/qa/sops.htm.

See Appendix A for the completed chain of custody form.

The 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.floridadep.org/labs/cgi-bin/sop/biosop.asp.

Results and Discussion

- **Toxicity Test Results**
  Tests were performed July 7 - 11, 2009.

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

  Cyprinella leedsi 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.

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

  *NOTE: In a acute screening test of 100%, of ≥ 48 hour duration, 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.).

- **Algal Growth Potential**
  The Algal Growth Potential (AGP) in the effluent was 0.3 U (U - Material was analyzed for but not detected; the reported value is the minimum detection limit) mg dry weight/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. Raschke and Schultz (1987) found that AGP values above 5.0 mg dry

weight/L represent a “problem” threshold for fresh receiving waters, implying nutrient enrichment.

The ratio of inorganic nitrogen to ortho-phosphate in the effluent suggests nitrogen limitation. The predicted AGP based on inorganic nitrogen concentrations was 13.1 (±20%) mg dry wt/L (Table 1; Miller et al. 1978). Differences greater than an order of magnitude between actual and predicted AGP values are considered sufficient evidence to warrant follow up testing with the algal growth inhibition bioassay. Although true algal growth inhibition can only be determined by performing an actual algal growth inhibition test; the lack of growth in the AGP test can be attributed at least in part to the effluent’s aluminum concentration (11,000 µg/L) as aluminum concentrations as low as 460 µg/L have inhibited growth (produced an IC_{50}) in the test species (USEPA ECOTOX data base September, 2009). Should algal growth inhibition be suspected, the district should request that the algal growth inhibition test be performed as a follow-up to the inspection.

See Table 1 for AGP results.

- **Chemistry Results**
  Total residual chlorine was not detected in the bioassay sample in the bioassay laboratory. Total ammonia was inadvertently not measured in the bioassay sample in the bioassay laboratory. The total ammonia concentration in the sample collected and preserved for chemical analysis was 0.026 J (J – Estimated value) mg N/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was < 0.02 mg N/L.

  Aluminum, arsenic, cadmium, calcium, chromium- III, copper, iron, lead, magnesium, nickel, and zinc were detected in the effluent at levels that comply with Class III fresh water quality criteria (62-302.530, F.A.C.). Effluent conductivity (specific conductance) (1,560 µmhos/cm) and turbidity (36 A (A – Value reported is the mean of two or more determinations) NTU) may have exceeded the Class III freshwater criterion, respectively, for specific conductance (≤ 50% above background or ≤1,275 µmhos/cm, whichever is greater 62-302.530 (22), F.A.C.) and turbidity (≤ 29 NTU above background) but due to the absence of background conductivity and turbidity measurements in the receiving waters (Rice Creek-Class III freshwater) it could not be determined if there were violations of class III criterion. Selenium and silver were detected in the effluent between the laboratory method detection limits (MDL) and the laboratory practical quantification limits (PQL). Chlorobenzene was detected in the blank between the MDL and the PQL. The effluent’s chlorophyll concentration was high.

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

Conclusion

The effluent sample collected from the EFF-1 NPDES sampling point for Outfall D-001 for this facility on July 6, 2009, was not acutely toxic to either test species during the 96-hour acute screening bioassays. The effluent AGP result, less than the "problem” threshold for fresh receiving waters, was more than an order of magnitude less than the predicted AGP value, suggesting that algal inhibition may be an issue. The lack of growth in the AGP test is attributed in part to the effluent’s aluminum concentration. It could not be determined if effluent conductivity (specific conductance) (1,560 µmhos/cm) and turbidity (36 A (A – Value reported is the mean of two or more determinations) NTU) exceeded the Class III freshwater criterion for specific conductance (≤1,275 µmhos/cm, 62-302.530 (22), F.A.C.) and turbidity (≤ 29 NTU above background) due to the absence of background measurements in the receiving waters (Rice Creek). Other effluent constituents did not violate water quality criteria or permit limits.

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.

USEPA ECOTOX Data-base September, 2009 (http://cfpub.epa.gov/ecotox/)

Table 1. Measured and predicted algal growth potential (AGP; mg dry weight/L) for total soluble inorganic nitrogen (TSIN), orthophosphate (OP), total nitrogen (TN) and total phosphorus (TP) limitation of the freshwater species *Pseudokirchneriella subcapitata* and ratios of nitrogen to phosphorus for samples collected from the Georgia Pacific Corporation- Palatka Operations plant on July 6, 2009.

Georgia Pacific Corporation - Palatka Operations NPDES #FL00002763						
Location	AGP (measured)	Predicted AGP (TSIN) ± 20%	Predicted AGP (OP) ± 20%	Predicted AGP (TN) ± 20%	Predicted AGP (TP) ± 20%	Inorganic N:P ratio	Total N:P ratio
Effluent	0.3 U	13.1 ± 2.6	141.9 ± 28.4	111.0 ± 22.2	262.3 ± 52.5	1.0	4.8

Table 2. Effluent limits, Class III Freshwater Criteria and chemical and microbiological data for samples collected from the Georgia Pacific Corporation-Palatka Operations facility on July 6, 2009.

Georgia Pacific Corporation - Palatka Operations NPDES# FL0002763	Class III Criteria	Effluent Limits	Effluent	
Organic Constituents (µg/L)				
Chlorobenzene	-	-	0.52	IF
Metals (µg/L unless otherwise noted)				
Aluminum	-	-	11,000	
Arsenic	≤ 50	-	4.05	
Cadmium	≤ 0.37 b	Report	0.14	
Calcium (mg/L)	-	-	49.1	
Chromium-III	≤ 120.92 b	-	7.3	
Copper	≤ 13.28 b	-	4.34	
Iron	≤ 1,000	Report	870	
Lead	≤ 5.39 b	Report	2.31	
Magnesium (mg/L)	-	-	6.95	
Nickel	≤ 74.01 b	-	18.9	
Selenium	≤ 5.0	-	0.25	I
Silver	≤ 0.07	-	0.026	I
Zinc	≤ 170.1 b	Report	36	
Nutrients (mg/L)				
Ortho-phosphate	-	-	0.33	
Total Phosphorus	-	-	0.61	
Total Ammonia	-	Report	0.026	J
Un-ionized Ammonia	≤ 0.02 s	-	≤ 0.02	c
Nitrate and Nitrite	-	-	0.32	
Total Kjeldahl Nitrogen	-	Report	2.6	
Organic Nitrogen	-	-	2.574	c
Total Nitrogen	-	Report	2.92	c
General Physical and Chemical Parameters				
Dissolved Oxygen (mg/L)	≥ 5.0	Report	5.9	
pH (SU)	6.0 - 8.5	6.0 - 8.5 s	8.3	
Conductivity (µmhos/cm)	≤ 1,275	Report	1,560	
Temperature (°C)	-	Report	30.7	
Sample Depth (m)	-	-	0.1	
Total Residual Chlorine (mg/L)	≤ 0.01	-	0.03	UQ£
Chlorophyll *a* (µg/L) - Corrected	-	-	25	
Phaeophytin (µg/L)	-	-	7.6	
Total Suspended Solids (mg/L)	-	Report	10	I
Turbidity (NTU)	< 29 t	Report	36	A
Color (pt-Co)	-	Report	750	
CBOD, 5 day (mg/L), N - inhibited	-	Report	3.8	A
Flow (MGD)	-	Report	25.2	a
Hardness (mg $CaCO_3$)	-	Report	151.22	c
Microbiology (Number of colony forming units/100ml)				
Fecal Coliforms ¥	≤ 400s #	≤ 800s	2	U

Value exceeds the Class III Water Quality Criteria or permit limits

a - Annual average
b - Value is calculated based on hardness
c - Value is calculated
s - Single sample
t - Shall not exceed 29 NTUs above background
A - Value reported is the mean of two or more determinations
F - Analyte was detected in both sample and field blank
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J - Estimated value
Q - Sample held beyond normal holding time
U - Material analyzed for but not detected; value reported is the method detection limit
£ - Total residual chlorine analysis performed in the bioassay laboratory.
¥ - Fecal coliforms analysis performed by Advanced Enviromental Labs
- If 10 or fewer samples are taken within a month, the single sample limit is 400 CFU (62-302.530(6), F.A.C.)

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Request Number: RQ-2009-07-06-33
Georgia Pacific

Requester: Jennifer Paris
Field Report Prepared By: EVA ISP
Collected By: SP/EVA
Send Final Report To Tom Kallemeyn
Sampling Agency: DEP

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

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	Georgia Pac. EFF 1	☐ Comp ☑ Grab	7/6/09 Time 1140		A
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L) 5.93	Storet Station Number	
	Matrix (Include type e.g. Salt, Fresh, etc) effluent; Temp (C) 30.68; pH 8.26	Sample Depth ☑ m ☐ ft 0.1	0.79	☑ Salinity (PPTh) ☑ Sp Conductance (umho/cm) 1560	NPDES Number FL0002763
	Latitude o ' " .	Longitude o ' " .	Comments		

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	Blank	☐ Comp ☑ Grab	Date 7/6/09 Time 1114		B
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	
	Matrix (Include type e.g. Salt, Fresh, etc) Temp (C) pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number
	Latitude o ' " .	Longitude o ' " .	Comments		

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	Trip Blank	☐ Comp ☐ Grab			
	Field ID Trip Blank	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	
	Matrix (Include type e.g. Salt, Fresh, etc) Temp (C) pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number
	Latitude o ' " .	Longitude o ' " .	Comments Filled in by receiving staff SK		

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
		☐ Comp ☐ Grab			
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	
	Matrix (Include type e.g. Salt, Fresh, etc) Temp (C) pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number
	Latitude o ' " .	Longitude o ' " .	Comments Stressed Reid in Tox by S.D. 10:41 7.7.09		

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
E. M.	7/6/09	FEDEX						7.7.09 9:00

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

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FDEP Biology Laboratory - Acute Screen Bioassay Bench Sheets

Facility: Georgia Pacific Corporation-Palatka Operations

Address: Highway 216

City: Palatka County: Putnam

Contact/District: Heather Webb / Northeast

NPDES Permit #: FL 0002763

LIMS Job #: TLH-20090707-59 LIMS Sample #: 1198498

Lims Data Entry: 7-20-09 MF Data Entry Verification: 7.23.09 BA

Sample Collection: Date: 7-6-09 Time: 1140

Hold Time Start: Date: 7-6-09 Time: 1140

Comments:

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

Test Type: (Screen)

Static / (Static Renewal) / Flow-through

Test Duration: 48 (96) Hours.

Test 1 validation: Test 1: SOP TA 07_01

Control survival ≥90%: (Yes) No

Temperature Range ≤3°C: (Yes) No

Test 2 validation: Test 2: SOP TA 07_02

Control survival ≥90%: (Yes) No

Temperature Range ≤3°C: (Yes) No

(√one)

Test 1 incubated in: ☑ Incubator #: 2 ☐ Waterbath #:

Test 2 incubated in: ☑ Incubator #: 2 ☐ Waterbath #:

Initial sample handling:

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

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

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

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

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

Light Intensity: 50 - 100 ft. candles

Photoperiod: 16 light 8 dark

Temperature Range °C: (If used)

Incubator # 2 min 26.0 max 26.5 mean 26.3

Incubator # ____ min. ____ max. ____ mean ____

Waterbath # ____ min. ____ max. ____ mean ____

Room B246 min 25.1 max 25.7 mean 25.4

Sample Validation:

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

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

Investigators' Signatures

Bruce Alexander

Marshall Faircloth

Kim N Spencer

Jonathan Vinci

Latta Wolfe

REVIEWER

Batch #	6-30-09	7-6-09							
Water Quality Parameters	20% DMW	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		Not measured		MF
Lab Total Residual Cl_2 (mg/L):	<0.03	<0.03					<0.03	KMS/JD	MF
Alkalinity (mg/L as $CaCO_3$):	89	147					376	BA	MF
Hardness (mg/L as $CaCO_3$):	86	148					200	BA	MF
Total Ammonia (mg/L as N):	<0.017	<0.017					Not measured	MF	BA
Conductivity: (µmhos) mmhos	176	281					1686	MF/JD	BA/MF
Salinity (ppth):	—	—					0.81	—	—

V 1.6 7/8/08

Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1198498 Test #: 1 SOP#:TA 07 01 Test Started: Date 7-7-09 Time: 1300

Organism/Batch/Age: C.dubia / 23-09 / <24 hrs Test Ended: Date 7-11-09 Time: 1030

Chamber/Test Volume: 30 / 20 ml Diluent/ Batch: DMW / 6-30-09 Test Duration: 48 hr (96 hr)

Food/Batch: ☑ YCT 1-22-09 ☑ P.sub 2-13-09

☐ Artemia Lot#____ Batch #: 0hr____ 24hr____ 48hr____ 72hr____

Feeding: ☐ Prior to Test ☐ Prior to Renewal ☑ 0 hr ☐ 24 hr ☑ 48 hr ☐ 72 hr

Concentration	Replicate	Chamber #	Test Hour: 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Ctrl	A	A	5	5	5	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	5	5	5	5
	D	D	5	5	5	5	5	5
Loaded/Verified by: MF / BA		Checked by:	DA	BA	BA	BA	DA	JJ

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

Comments:

Test Results:

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

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

If Calculated: 95% CI________ Method________

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

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Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1198498 Test #: 2/2 SOP#:TA 07 02 Test Started: Date 7-7-09 Time: 13:45

Organism/Batch/Age: C.leedsi / 7.7.09 / 12days Test Ended: Date 7-11-09 Time: 1100

Chamber/Test Volume: 1000 / 500 ml Diluent/ Batch: Well / 7.6.09 Test Duration: 48 hr (96 hr)

Food/Batch: [ ] YCT___ [ ] P.sub___

[X] Artemia Lot# 38438 Batch #: 0hr 89-09 24hr — 48hr 91-09 [illegible] 72hr —

Feeding: [✓] Prior to Test [✓] Prior to Renewal [✓] 0 hr [ ] 24 hr [✓] 48 hr [ ] 72 hr

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Ctrl	A	B13	10	10	10	10	10	10
	B	B14	10	10	10	10	10	10
100%	A	B15	10	10	10	10	10	10
	B	B16	10	10	10	10	10	10
Loaded/Verified by: JD / BA		Checked by:	JD	JD	JD	JD	JD	JD

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

Comments:

Test Results:

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

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

If Calculated: 95% CI___ Method___

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

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FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 1198498 Test #: 1 of 2

TEST SOP #: TA07 01 Test Species: ☑ *Ceriodaphnia dubia* ☐ *Cyprinella leedsi* ☐ *Pimephales promelas*

Test aerated: yes (no) (circle one) Check 1: ☐ *Americamysis bahia* ☐ *Menidia beryllina* ☐ Other:

Concentration: Control	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		A	M		M
pH (S.U.)	8.0		8.2	8.0		8.2
Temperature °C	24.1		24.0	24.5		24.0
Dissolved Oxygen mg/L aerate if < 4	8.0		7.0	6.9		7.9
Conductivity (µmhos) mmhos	176		188	0.177		0.215
Salinity ppth	—					
(initials) Measured by:	MF		BA	BA		JD
(initials) Recorded by:	MF		BA	BA		JD

Comments:

Concentration: 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		A	A		M
pH (S.U.)	8.5		8.7	8.4		8.8
Temperature °C	25.8		24.0	24.5		24.1
Dissolved Oxygen mg/L aerate if < 4	8.2		6.6	6.6		8.0
Conductivity (µmhos) mmhos	1694		1832	1631		1795
Salinity ppth	—			—		
(initials) Measured by:	MF		BA	BA		JD
(initials) Recorded by:	MF		BA	BA		JD

Comments:

Salinity only needs measuring if saltwater.

Concentration	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate						
pH (S.U.)						
Temperature °C						
Dissolved Oxygen mg/L aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

Concentration	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate						
pH (S.U.)						
Temperature °C						
Dissolved Oxygen mg/L aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 1198498 Test #: 2 of 2

TEST SOP #: TA07_02 Test Species: ☐ *Ceriodaphnia dubia* ☑ *Cyprinella leedsi* ☑ *Pimephales promelas* Not P. promelas MF 7-22-09

Test aerated: ~~yes~~ (no) (circle one) Check 1: ☐ *Americamysis bahia* ☐ *Menidia beryllina* ☐ Other:_____

Concentration ~~CONTROL~~ MF CONTROL	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	A	A	B	A
pH (S.U.)	7.8	7.8	8.2	7.9	8.2	8.2
Temperature °C	24.5	24.4	24.0	24.1	24.7	24.8
Dissolved Oxygen mg/L aerate if < 4	7.8	6.8	6.5	7.4	7.2	7.5
Conductivity ~~µmhos~~ mmhos	281	~~294~~ 284 BA	301	283	279	295
Salinity ppth	—	—	—	—	—	—
(initials) Measured by:	JD	BA	JD	JD	JD	JD
(initials) Recorded by:	JD	BA	JD	JD	JD	JD

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	A	A	B	A
pH (S.U.)	8.4	8.6	8.6	8.5	8.5	8.6
Temperature °C	25.9	24.1	24.2	25.2	24.9	24.8
Dissolved Oxygen mg/L aerate if < 4	7.9	6.3	6.3	8.2	6.7	6.9
Conductivity ~~µmhos~~ mmhos	1680	1623	1762	1670	1667	1665
Salinity ppth	—	—	—	—	—	—
(initials) Measured by:	JD	BA	JD	JD	JD	JD
(initials) Recorded by:	JD	BA	JD	JD	JD	JD

Comments:

Salinity only needs measuring if saltwater.

Concentration	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate						
pH (S.U.)						
Temperature °C						
Dissolved Oxygen mg/L aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

Concentration	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate						
pH (S.U.)						
Temperature °C						
Dissolved Oxygen mg/L aerate if < 4						
Conductivity µmhos mmhos						
Salinity ppth						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

Appendix B. (continued)

Bioassay Instrument ID

Test ID: Georgia Pacific Dates: 7.7.09 - 7.11.09

METER / DEVICE	ID	SOP	Parameter	Method	√used
YSI Model 58 Dissolved Oxygen Meter	90H018262	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	SM 2510 B	✓
			Salinity	SM 2520 B	✓
Denver Model 225 ISE with ammonia probe	SN K01377	TA06_17	Ammonia	SM 4500 NH3 F	✓
Thermometer (DO probe)	YSI 5750 SN 05J1720	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 BA 7-13-09

V 1.1 6/12/08 MF

000024

PAGE

Appendix C. SRT Bench Sheets and Statistical Analysis

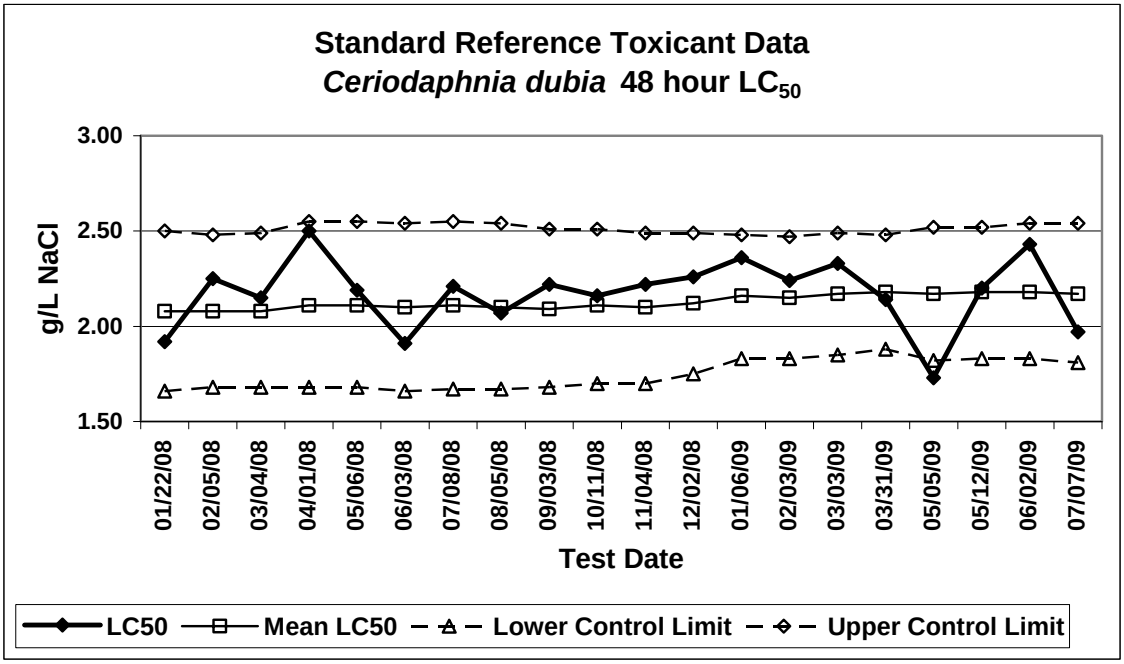
Florida Department of Environmental Protection
Bureau of Laboratories

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

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
01/22/08	1.92	2.08	0.20	1.66	2.50
02/05/08	2.25	2.08	0.20	1.68	2.48
03/04/08	2.15	2.08	0.20	1.68	2.49
04/01/08	2.50	2.11	0.22	1.68	2.55
05/06/08	2.19	2.11	0.22	1.68	2.55
06/03/08	1.91	2.10	0.22	1.66	2.54
07/08/08	2.21	2.11	0.22	1.67	2.55
08/05/08	2.07	2.10	0.22	1.67	2.54
09/03/08	2.22	2.09	0.21	1.68	2.51
10/11/08	2.16	2.11	0.20	1.70	2.51
11/04/08	2.22	2.10	0.20	1.70	2.49
12/02/08	2.26	2.12	0.19	1.75	2.49
01/06/09	2.36	2.16	0.16	1.83	2.48
02/03/09	2.24	2.15	0.16	1.83	2.47
03/03/09	2.33	2.17	0.16	1.85	2.49
03/31/09	2.14	2.18	0.15	1.88	2.48
05/05/09	1.73	2.17	0.18	1.82	2.52
05/12/09	2.20	2.18	0.17	1.83	2.52
06/02/09	2.43	2.18	0.18	1.83	2.54
07/07/09	1.97	2.17	0.18	1.81	2.54

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

CV = 8.45
EPA reference 75th quartile CV = 29%



Appendix C. (continued)

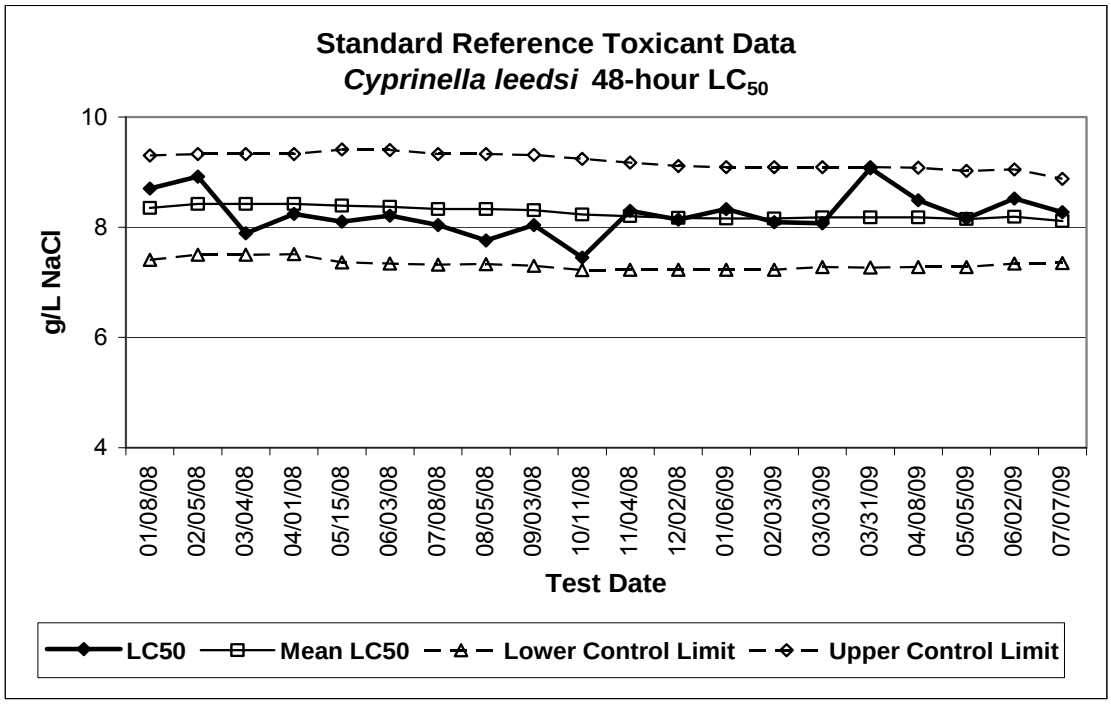
Florida Department of Environmental Protection
Bureau of Laboratories

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

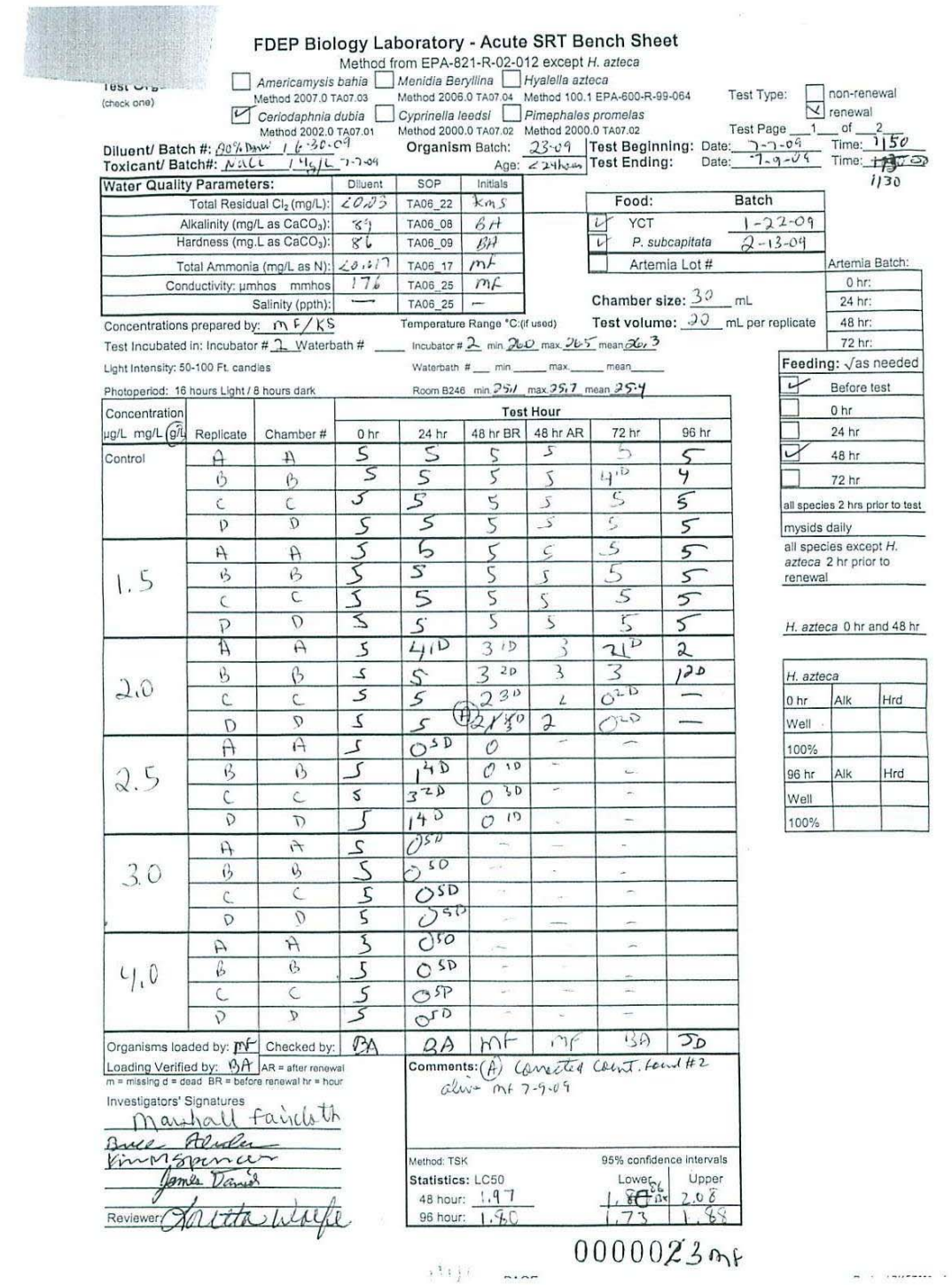
Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
01/08/08	8.7	8.35	0.47	7.41	9.30
02/05/08	8.92	8.42	0.46	7.50	9.33
03/04/08	7.89	8.42	0.46	7.50	9.33
04/01/08	8.24	8.42	0.45	7.51	9.33
05/15/08	8.1	8.39	0.51	7.36	9.41
06/03/08	8.21	8.37	0.51	7.34	9.40
07/08/08	8.04	8.33	0.50	7.32	9.33
08/05/08	7.76	8.33	0.50	7.33	9.33
09/03/08	8.04	8.31	0.50	7.30	9.31
10/11/08	7.45	8.23	0.51	7.22	9.24
11/04/08	8.3	8.20	0.48	7.23	9.17
12/02/08	8.14	8.17	0.47	7.23	9.11
01/06/09	8.33	8.16	0.47	7.23	9.09
02/03/09	8.09	8.16	0.47	7.23	9.09
03/03/09	8.07	8.18	0.45	7.28	9.09
03/31/09	9.07	8.18	0.45	7.27	9.09
04/08/09	8.49	8.18	0.45	7.28	9.08
05/05/09	8.16	8.15	0.43	7.28	9.02
06/02/09	8.52	8.19	0.43	7.34	9.05
07/07/09	8.27	8.11	0.38	7.35	8.88

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

CV = 5.04
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 Org. (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 #: 20% Dgw 1-30-09

Toxicant/ Batch#: NaCl 1 g/L 7-7-09

Organism Batch: 23-09

Age: <24hours

Test Beginning: Date: 7-7-09 Time: 1150

Test Ending: Date: 7-9-09 Time: 1130

Water Quality Parameters:	Diluent	SOP	Initials
Total Residual Cl_2 (mg/L):	<0.03	TA06_22	kms
Alkalinity (mg/L as $CaCO_3$):	84	TA06_08	BA
Hardness (mg.L as $CaCO_3$):	86	TA06_09	BH
Total Ammonia (mg/L as N):	<0.017	TA06_17	mf
Conductivity: µmhos mmhos	176	TA06_25	mf
Salinity (ppth):	—	TA06_25	—

Food:	Batch
☑ YCT	1-22-09
☑ *P. subcapitata*	2-13-09
☐ 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/KS

Temperature Range °C:(if used)

Test Incubated in: Incubator # 2 Waterbath # ____ Incubator # 2 min 260 max 26.5 mean 26.3

Light Intensity: 50-100 Ft. candles

Waterbath # ___ min ____ max. ____ mean ____

Photoperiod: 16 hours Light / 8 hours dark

Room B246 min 25.1 max 25.7 mean 25.4

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

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

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	4 1D	4
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
1.5	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
2.0	A	A	5	4 1D	3 1D	3	2 2D	2
	B	B	5	5	3 2D	3	3	1 2D
	C	C	5	5	2 3D	2	0 2D	—
	D	D	5	5	(A) 2 1 3D	2	0 2D	—
2.5	A	A	5	0 5D	0	—	—	
	B	B	5	1 4D	0 1D	—	—	
	C	C	5	3 2D	0 3D	—	—	
	D	D	5	1 4D	0 1D	—	—	
3.0	A	A	5	0 5D	—	—	—	
	B	B	5	0 5D	—	—	—	
	C	C	5	0 5D	—	—	—	
	D	D	5	0 5D	—	—	—	
4.0	A	A	5	0 5D	—	—	—	
	B	B	5	0 5D	—	—	—	
	C	C	5	0 5D	—	—	—	
	D	D	5	0 5D	—	—	—	
Organisms loaded by: MF	Checked by:		BA	BA	MF	MF	BA	JD

Loading Verified by: BA AR = after renewal

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

Comments: (A) Corrected count. Found #2 alive MF 7-9-09

Investigators' Signatures

Marshall Faircloth

Bruce Herdes

Kim Spencer

James Davis

Reviewer: Loretta Wolfe

Method: TSK

Statistics: LC50	95% confidence intervals Lower	Upper
48 hour: 1.97	1.86	2.08
96 hour: 1.80	1.73	1.88

0000023 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: 7-7-09 Time: 1150
Test Ending: Date: 7.11.09 Time: 11:30

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	8.1	24.1	7.9	0.176	
		24 hr	—	—	—	—	
	A	48 hr BR	8.0	24.6	7.5	0.190	
	m	48 hr AR	8.1	24.4	7.6	0.175	
		72 hr					
	m	96 hr	8.2	24.4	7.3	0.197	
1.5	m	0 hr	8.0	24.2	7.9	3.13	
		24 hr	—	—	—	—	
	A	48 hr BR	8.0	24.6	7.5	3.49	
	m	48 hr AR	8.1	24.3	7.7	3.00	
		72 hr					
	m	96 hr	8.1	24.3	7.7	2.87	
2.0	m	0 hr	8.0	24.1	7.9	4.03	
		24 hr	—	—	—	—	
	A	48 hr BR	8.1	24.6	7.6	4.57	
	m	48 hr AR	8.1	24.3	7.7	3.88	
		72 hr					
	m	96 hr	8.1	24.3	7.9	3.95	
2.5	m	0 hr	8.0	24.0	7.8	5.01	
		24 hr	—	—	—	—	
	A	48 hr BR	8.1	24.5	7.6	5.45	
		48 hr AR		~~24.3~~ NA	mf		
		72 hr					
		96 hr					
3.0	m	0 hr	8.0	24.1	7.8	5.91	
	A	24 hr	7.8	24.0	7.1	6.33	—
		48 hr BR		mf			
		48 hr AR					
		72 hr					
		96 hr					
4.0	m	0 hr	8.0	24.2	7.7	7.57	
	A	24 hr	7.8	24.0	7.2	7.67	—
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					

Investigators Signatures
Marshall Faircloth
Bruce Ahrens
James Daniels
Kirk M Spencer
Reviewed By: Scotty Wolfe

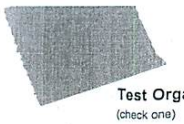
Measured by:
0 hr: MF
24 hr: DA
48 hr BR: MF
48 hr AR: MF
72 hr:
96 hr: DS

Measure/record salinity for marine tests

Comments:

000000 84 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 / 7L0209
Toxicant/ Batch#: NaCl / 7L0209
Organism Batch: 7709 Age: 12 days
Test Beginning: Date: 7.20.09 Time: 1205
Test Ending: Date: 7.31.09 Time: 1115

Water Quality Parameters:	Diluent	SOP	Initials
Total Residual Cl_2 (mg/L):	<0.03	TA06_22	KMS
Alkalinity (mg/L as $CaCO_3$):	147	TA06_08	BA
Hardness (mg.L as $CaCO_3$):	148	TA06_09	BA
Total Ammonia (mg/L as N):	<0.017	TA06_17	MF
Conductivity (µmhos / mmhos):	278	TA06_25	JD
Salinity (ppth):	—	TA06_25	—

Food:	Batch
☐ YCT	
☐ *P. subcapitata*	
☒ Artemia Lot # 38438	Artemia Batch:

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

Concentrations prepared by: JD
Temperature Range °C:(if used)
Test Incubated in: Incubator # 2 Waterbath # ___ Incubator # 2 min. 26.0 max. 26.5 mean 26.3
Light Intensity: 50-100 Ft. candles
Waterbath # ___ min. ___ max. ___ mean ___
Photoperiod: 16 hours Light / 8 hours dark
Room B246 min. 25.1 max. 25.7 mean 25.4

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	A13	10	10	10	10	10	10
	B	A14	10	10	10	10	10	10
6	A	A15	10	10	10	10	10	10
	B	A16	10	10	10	10	10	10
7	A	A17	10	10	10	10	10	10
	B	A18	10	10	10	10	10	10
8	A	A19	10	9 1D	9	9	9	9
	B	A20	10	8 2D	6 2D	6	6	6
9	A	A21	10	3 7D	0 3D	—	—	—
	B	A22	10	2 8D	1 1D	1	1	1
10	A	A23	10	0 10D				
	B	A24	10	0 10D				
Organisms loaded by: JD	Checked by:		BA	JD	JD	JD	JD	JD
Loading Verified by: BA								

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

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

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

Artemia Batch:
0 hr: 89-09
24 hr:
48 hr: 97-09
72 hr:

Comments:

Investigators' Signatures
James Daniels
Brent Agee
Marshall Faircloth
Kim M Spencer
Reviewer: Loretta C. Wolfe

Method: TSK

Statistics: LC50	95% confidence intervals Lower	Upper
48 hour: 8.27	8.05	8.49
96 hour: 8.27	8.05	8.49

000004 5 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: 7.7.09 Time: 1205
Test Ending: Date: 7.11.09 Time: 1115
Test Type: ☐ non-renewal ☒ renewal

hr = hour
AR = after renewal BR = before renewal

Concentration µg/L mg/L (n)	Replicate	Test Hour	pH (SU)	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity ☐ µmhos ☒ mmhos	Salinity (ppth)
Control	A	0 hr	7.7	24.0	7.5	0.278	
	B	24 hr	7.9	24.0	6.8	0.288	
	A	48 hr BR	8.0	24.5	6.8	0.279	
	A	48 hr AR	8.0	24.0	7.2	0.283	
	B	72 hr	8.1	24.7	6.8	0.280	
	A	96 hr	8.1	25.6	7.2	0.314	
6	A	0 hr	7.8	24.1	7.5	11.2	
	B	24 hr	7.9	24.0	6.3	11.0	
	A	48 hr BR	8.1	24.5	6.6	10.9	
	A	48 hr AR	8.0	24.0	7.0	11.0	
	B	72 hr	8.1	24.9	6.5	11.3	
	A	96 hr	8.1	25.5	6.7	11.5	
7	A	0 hr	7.8	24.1	7.5	13.1	
	B	24 hr	7.9	24.0	6.2	12.94	
	A	48 hr BR	8.1	24.2	6.7	12.9	
	A	48 hr AR	8.0	24.0	7.0	12.6	
	B	72 hr	8.1	25.0	6.5	13.1	
	A	96 hr	8.1	25.4	6.8	13.3	
8	A	0 hr	7.9	24.1	7.4	14.8	
	B	24 hr	7.9	24.0	6.3	14.7	
	A	48 hr BR	8.1	24.3	6.8	14.6	
	A	48 hr AR	8.0	24.0	7.0	14.3	
	B	72 hr	8.1	24.7	6.5	14.1	
	A	96 hr	8.2	25.1	6.9	14.7	
9	A	0 hr	7.9	24.0	7.5	16.3	
	B	24 hr	8.0	24.0	6.2	16.2	
	A	48 hr BR	8.1	24.2	6.7	15.9	
	B	48 hr AR	8.0	24.0	6.9	15.4	
	B	72 hr	8.1	24.5	6.8	15.7	
	B	96 hr	8.2	25.5	7.1	16.0	
10	A	0 hr	7.9	24.0	7.5	18.0	
	B	24 hr	7.9	24.1	6.1	17.9	
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					

Investigators Signatures
Jana Daniel
Marshall Faircloth
Kim N Spencer
Reviewed By: Loretta Colvin

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

Measure/record salinity for marine tests

Comments:

000007 imf

Appendix C. (continued)

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

DATE: 7-7-09 DURATION: 48 h TOXICANT: NaCl
SPECIES: *Ceriodaphnia dubia*

RAW DATA: Concentration (g/L)	Number Exposed	Mortalities
.00	20	0
1.50	20	0
2.00	20	10
2.50	20	20
3.00	20	20
4.00	20	20

SPEARMAN-KARBER TRIM: .00%

SPEARMAN-KARBER ESTIMATES: LC50: 1.97
95% LOWER CONFIDENCE: 1.86
95% UPPER CONFIDENCE: 2.0

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

DATE: 7-7-09 DURATION: 48 h TOXICANT: NaCl
SPECIES: *Cyprinella leedsi*

RAW DATA: Concentration (g/L)	Number Exposed	Mortalities
.00	20	0
6.00	20	0
7.00	20	0
8.00	20	5
9.00	20	19
10.00	20	20

SPEARMAN-KARBER TRIM: .00%

SPEARMAN-KARBER ESTIMATES: LC50:8.27
95% LOWER CONFIDENCE: 8.05
95% UPPER CONFIDENCE: 8.49

Appendix D. Test Organism Receipts

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

Organism Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Date: 7/6/2009

Shipped to: FDEP

P.O. No: _____

Species	Quantity	Age	Brood Number	Temp.	pH	Salinity
Mysidopsis bahia	150	4 DAYS	MS090702	25°C	7.9 s.u	20‰
Menidia beryllina	150	12 DAYS	SS090624	25°C	7.9 s.u	20‰
						Hardness
Cyprinella leedsi	200	11 DAYS	CL090625	25°C	7.8 s.u.	80 mg/L
Pimephales promelas	150	8 DAYS	FM090628	25°C	7.8 s.u.	80 mg/L

Packed by: DV

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 Georgia Pacific Corporation – Palatka Operations Facility Outfall D-001, sampled on July 6, 2009.

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/6/2009 11:14	Blank	Metals	Zinc	5	U	ug/L	5	20
7/6/2009 11:14	Blank	Metals	Copper	0.5	U	ug/L	0.5	0.5
7/6/2009 11:14	Blank	Metals	Cadmium	0.03	U	ug/L	0.03	0.12
7/6/2009 11:14	Blank	Metals	Nickel	0.25	U	ug/L	0.25	1
7/6/2009 11:14	Blank	Metals	Iron	30	U	ug/L	30	120
7/6/2009 11:14	Blank	Metals	Arsenic	0.25	U	ug/L	0.25	1
7/6/2009 11:14	Blank	Metals	Silver	0.025	U	ug/L	0.025	0.1
7/6/2009 11:14	Blank	Metals	Selenium	0.2	U	ug/L	0.2	0.8
7/6/2009 11:14	Blank	Metals	Magnesium	0.04	U	mg/L	0.04	0.16
7/6/2009 11:14	Blank	Metals	Lead	0.2	U	ug/L	0.2	0.8
7/6/2009 11:14	Blank	Metals	Aluminum	60	U	ug/L	60	240
7/6/2009 11:14	Blank	Metals	Chromium	0.3	U	ug/L	0.3	1.2
7/6/2009 11:14	Blank	Metals	Calcium	0.075	U	mg/L	0.075	0.3
7/6/2009 11:14	Blank	Nutrients	TSS	4	U	mg/L	4	16
7/6/2009 11:14	Blank	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
7/6/2009 11:14	Blank	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
7/6/2009 11:14	Blank	Nutrients	Kjeldahl Nitrogen	0.08	U	mg N/L	0.08	0.2
7/6/2009 11:14	Blank	Nutrients	NO2NO3-N	0.004	U	mg N/L	0.004	0.01
7/6/2009 11:14	Blank	Nutrients	Total-P	0.004	U	mg P/L	0.004	0.01
7/6/2009 11:14	Blank	Nutrients	Turbidity	0.1	U	NTU	0.1	0.1
7/6/2009 11:14	Blank	Overflow	COD	6.3	U	mg/L	6.3	20
7/6/2009 11:14	Blank	Pesticides	Atrazine	0.05	U	ug/L	0.05	0.2
7/6/2009 11:14	Blank	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	1
7/6/2009 11:14	Blank	Pesticides	Metolachlor	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Blank	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
7/6/2009 11:14	Blank	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
7/6/2009 11:14	Blank	Pesticides	Chlordane	0.2	U	ug/L	0.2	0.8
7/6/2009 11:14	Blank	Pesticides	Heptachlor	0.01	U	ug/L	0.01	0.04
7/6/2009 11:14	Blank	Pesticides	Fonofos	0.1	U	ug/L	0.1	0.4
7/6/2009 11:14	Blank	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
7/6/2009 11:14	Blank	Pesticides	Delta-BHC	0.01	U	ug/L	0.01	0.04
7/6/2009 11:14	Blank	Pesticides	Endrin	0.05	UJ	ug/L	0.05	0.2
7/6/2009 11:14	Blank	Pesticides	Phorate	0.05	U	ug/L	0.05	0.2

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/6/2009 11:14	Blank	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6
7/6/2009 11:14	Blank	Pesticides	Endosulfan I	0.02	U	ug/L	0.02	0.08
7/6/2009 11:14	Blank	Pesticides	Endosulfan Sulfate	0.02	U	ug/L	0.02	0.08
7/6/2009 11:14	Blank	Pesticides	Toxaphene	0.75	U	ug/L	0.75	3
7/6/2009 11:14	Blank	Pesticides	Butylate	0.2	U	ug/L	0.2	0.8
7/6/2009 11:14	Blank	Pesticides	Hexazinone	0.1	UJ	ug/L	0.1	0.4
7/6/2009 11:14	Blank	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
7/6/2009 11:14	Blank	Pesticides	Naled	0.8	U	ug/L	0.8	3.2
7/6/2009 11:14	Blank	Pesticides	Beta-BHC	0.01	U	ug/L	0.01	0.04
7/6/2009 11:14	Blank	Pesticides	DDD-p,p'	0.02	U	ug/L	0.02	0.08
7/6/2009 11:14	Blank	Pesticides	DDT-p,p'	0.03	U	ug/L	0.03	0.12
7/6/2009 11:14	Blank	Pesticides	Dieldrin	0.02	U	ug/L	0.02	0.08
7/6/2009 11:14	Blank	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2
7/6/2009 11:14	Blank	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2
7/6/2009 11:14	Blank	Pesticides	Parathion Methyl	0.1	U	ug/L	0.1	0.4
7/6/2009 11:14	Blank	Pesticides	Endosulfan II	0.02	U	ug/L	0.02	0.08
7/6/2009 11:14	Blank	Pesticides	Endrin Aldehyde	0.02	U	ug/L	0.02	0.08
7/6/2009 11:14	Blank	Pesticides	Heptachlor Epoxide	0.02	U	ug/L	0.02	0.08
7/6/2009 11:14	Blank	Pesticides	Alachlor	0.6	U	ug/L	0.6	2.4
7/6/2009 11:14	Blank	Pesticides	Bromacil	0.2	U	ug/L	0.2	0.8
7/6/2009 11:14	Blank	Pesticides	Aldrin	0.01	U	ug/L	0.01	0.04
7/6/2009 11:14	Blank	Pesticides	Alpha-BHC	0.01	U	ug/L	0.01	0.04
7/6/2009 11:14	Blank	Pesticides	DDE-p,p'	0.02	U	ug/L	0.02	0.08
7/6/2009 11:14	Blank	Pesticides	Gamma-BHC	0.01	U	ug/L	0.01	0.04
7/6/2009 11:14	Blank	Pesticides	Methoxychlor	0.05	U	ug/L	0.05	0.2
7/6/2009 11:14	Blank	Pesticides	Azinphos Methyl	0.2	U	ug/L	0.2	0.8
7/6/2009 11:14	Blank	Pesticides	Metribuzin	0.1	U	ug/L	0.1	0.4
7/6/2009 11:14	Blank	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.8
7/6/2009 11:14	Blank	Pesticides	Chlorpyrifos Methyl	0.1	U	ug/L	0.1	0.4
7/6/2009 11:14	Blank	Pesticides	Diazinon	0.05	U	ug/L	0.05	0.2
7/6/2009 11:14	Blank	Pesticides	Ethoprop	0.1	U	ug/L	0.1	0.4
7/6/2009 11:14	Blank	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8
7/6/2009 11:14	Blank	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	2-Nitrophenol	1.1	U	ug/L	1.1	4.2

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/6/2009 11:14	Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.1	U	ug/L	2.1	8.5
7/6/2009 11:14	Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.2	U	ug/L	3.2	13
7/6/2009 11:14	Blank	Priority Organic Pollutants	1,1,1-Trichloroethane	0.2	U	ug/L	0.2	1
7/6/2009 11:14	Blank	Priority Organic Pollutants	Bromodichloromethane	0.2	U	ug/L	0.2	1
7/6/2009 11:14	Blank	Priority Organic Pollutants	Methylene chloride	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Vinyl chloride	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Blank	Priority Organic Pollutants	4-Nitrophenol	16	U	ug/L	16	64
7/6/2009 11:14	Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Di-n-butyl phthalate	5.3	UJ	ug/L	5.3	21
7/6/2009 11:14	Blank	Priority Organic Pollutants	Fluorene	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Hexachlorobenzene	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Hexachlorobutadiene	3.2	U	ug/L	3.2	13
7/6/2009 11:14	Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.1	U	ug/L	2.1	8.5
7/6/2009 11:14	Blank	Priority Organic Pollutants	Nitrobenzene	2.1	U	ug/L	2.1	8.5
7/6/2009 11:14	Blank	Priority Organic Pollutants	Benzene	0.2	U	ug/L	0.2	1
7/6/2009 11:14	Blank	Priority Organic Pollutants	Chloromethane	0.5	UJ	ug/L	0.5	2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Ethylbenzene	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Tetrachloroethene	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Blank	Priority Organic Pollutants	cis-1,3-Dichloropropene	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	2-Chloronaphthalene	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	2-Chlorophenol	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.2	U	ug/L	3.2	13
7/6/2009 11:14	Blank	Priority Organic Pollutants	Acenaphthylene	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.2	U	ug/L	3.2	13
7/6/2009 11:14	Blank	Priority Organic Pollutants	Phenanthrene	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Trichlorofluoromethane	0.5	UJ	ug/L	0.5	2
7/6/2009 11:14	Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Dimethyl phthalate	11	U	ug/L	11	42
7/6/2009 11:14	Blank	Priority Organic Pollutants	Hexachloroethane	3.2	U	ug/L	3.2	13
7/6/2009 11:14	Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	1.1	U	ug/L	1.1	4.2

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/6/2009 11:14	Blank	Priority Organic Pollutants	1,1,2-Trichloroethane	0.2	U	ug/L	0.2	1
7/6/2009 11:14	Blank	Priority Organic Pollutants	1,2-Dichlorobenzene	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Blank	Priority Organic Pollutants	1,2-Dichloroethane	0.2	U	ug/L	0.2	1
7/6/2009 11:14	Blank	Priority Organic Pollutants	1,2-Dichloropropane	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Bromoform	0.5	UJ	ug/L	0.5	2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Bromomethane	0.5	UJ	ug/L	0.5	2
7/6/2009 11:14	Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	2,4-Dimethylphenol	11	U	ug/L	11	42
7/6/2009 11:14	Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Acenaphthene	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Benzidine	110	U	ug/L	110	420
7/6/2009 11:14	Blank	Priority Organic Pollutants	Benzo(a)pyrene	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Di-n-octyl phthalate	1.1	UJ	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Isophorone	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Naphthalene	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Phenol	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	1,1-Dichloroethene	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Blank	Priority Organic Pollutants	1,3-Dichlorobenzene	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Blank	Priority Organic Pollutants	1,4-Dichlorobenzene	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Chloroform	0.2	U	ug/L	0.2	1
7/6/2009 11:14	Blank	Priority Organic Pollutants	trans-1,3-Dichloropropene	0.2	U	ug/L	0.2	1
7/6/2009 11:14	Blank	Priority Organic Pollutants	Anthracene	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	16	U	ug/L	16	64
7/6/2009 11:14	Blank	Priority Organic Pollutants	Diethyl phthalate	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1	U	ug/L	2.1	8.5
7/6/2009 11:14	Blank	Priority Organic Pollutants	Pentachlorophenol	3.2	U	ug/L	3.2	13
7/6/2009 11:14	Blank	Priority Organic Pollutants	Pyrene	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	1,1,2,2-Tetrachloroethane	0.5	UJ	ug/L	0.5	2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Carbon tetrachloride	0.2	UJ	ug/L	0.2	1
7/6/2009 11:14	Blank	Priority Organic Pollutants	Chlorobenzene	0.52	I	ug/L	0.2	1
7/6/2009 11:14	Blank	Priority Organic Pollutants	Dibromochloromethane	0.2	UJ	ug/L	0.2	1
7/6/2009 11:14	Blank	Priority Organic Pollutants	trans-1,2-Dichloroethene	0.5	U	ug/L	0.5	2

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/6/2009 11:14	Blank	Priority Organic Pollutants	2,4-Dinitrophenol	16	U	ug/L	16	64
7/6/2009 11:14	Blank	Priority Organic Pollutants	Benzo(a)anthracene	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Fluoranthene	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.2	U	ug/L	3.2	13
7/6/2009 11:14	Blank	Priority Organic Pollutants	Trichloroethene	0.2	U	ug/L	0.2	1
7/6/2009 11:14	Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	2,4-Dichlorophenol	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	42	UJ	ug/L	42	170
7/6/2009 11:14	Blank	Priority Organic Pollutants	Butyl benzyl phthalate	5.3	U	ug/L	5.3	21
7/6/2009 11:14	Blank	Priority Organic Pollutants	Chrysene	1.1	U	ug/L	1.1	4.2
7/6/2009 11:14	Blank	Priority Organic Pollutants	1,1-Dichloroethane	0.2	U	ug/L	0.2	1
7/6/2009 11:14	Blank	Priority Organic Pollutants	Chloroethane	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Blank	Priority Organic Pollutants	Toluene	0.5	U	ug/L	0.5	2
7/6/2009 11:40	Effluent	AGP/LN	Algal Growth Potential	0.3	U	mg DryWt/L	0.3	0.9
7/6/2009 11:40	Effluent	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	25		ug/L	1.1	3.4
7/6/2009 11:40	Effluent	Chlorophyll/Grain Size/BOD	Phaeophytin-a	7.6		ug/L	0.8	2.4
7/6/2009 11:40	Effluent	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	3.8	A	mg/L	0.2	2
7/6/2009 11:40	Effluent	Overflow	Fecal Coliforms-Membrane Filter	2	U	#/100 mL	2	
7/6/2009 11:40	Effluent	Toxicology	Bioassay-Acute-Screen-FW-Fish, LC50	100	L	LC50		
7/6/2009 11:40	Effluent	Toxicology	Bioassay-Acute-Screen-FW-C.dubia, LC50	100	L	LC50		
7/6/2009 11:40	Effluent	Metals	Arsenic	4.05		ug/L	0.25	1
7/6/2009 11:40	Effluent	Metals	Cadmium	0.14		ug/L	0.03	0.12
7/6/2009 11:40	Effluent	Metals	Iron	870		ug/L	30	120
7/6/2009 11:40	Effluent	Metals	Copper	4.34		ug/L	0.5	0.5
7/6/2009 11:40	Effluent	Metals	Aluminum	11000		ug/L	60	240
7/6/2009 11:40	Effluent	Metals	Selenium	0.25	I	ug/L	0.2	0.8
7/6/2009 11:40	Effluent	Metals	Silver	0.026	I	ug/L	0.025	0.1
7/6/2009 11:40	Effluent	Metals	Chromium	7.3		ug/L	0.3	1.2
7/6/2009 11:40	Effluent	Metals	Zinc	36		ug/L	5	20
7/6/2009 11:40	Effluent	Metals	Magnesium	6.95		mg/L	0.04	0.16
7/6/2009 11:40	Effluent	Metals	Lead	2.31		ug/L	0.2	0.8
7/6/2009 11:40	Effluent	Metals	Calcium	49.1		mg/L	0.075	0.3
7/6/2009 11:40	Effluent	Metals	Nickel	18.9		ug/L	0.25	1

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/6/2009 11:40	Effluent	Nutrients	Specific_Conductance	1710		umhos/cm	2	8
7/6/2009 11:40	Effluent	Nutrients	NO2NO3-N	0.32		mg N/L	0.004	0.01
7/6/2009 11:40	Effluent	Nutrients	O-Phosphate-P	0.33		mg P/L	0.008	0.02
7/6/2009 11:40	Effluent	Nutrients	Kjeldahl Nitrogen	2.6		mg N/L	0.08	0.2
7/6/2009 11:40	Effluent	Nutrients	Ammonia-N	0.026	J	mg N/L	0.01	0.02
7/6/2009 11:40	Effluent	Nutrients	TSS	10	I	mg/L	4	16
7/6/2009 11:40	Effluent	Nutrients	Total-P	0.61		mg P/L	0.008	0.02
7/6/2009 11:40	Effluent	Nutrients	Color	750		PCU	120	120
7/6/2009 11:40	Effluent	Nutrients	Turbidity	36	A	NTU	0.2	0.2
7/6/2009 11:40	Effluent	Overflow	COD	140		mg/L	6.3	20
7/6/2009 11:40	Effluent	Pesticides	Atrazine	0.05	U	ug/L	0.05	0.2
7/6/2009 11:40	Effluent	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
7/6/2009 11:40	Effluent	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
7/6/2009 11:40	Effluent	Pesticides	Chlordane	0.2	U	ug/L	0.2	0.8
7/6/2009 11:40	Effluent	Pesticides	Gamma-BHC	0.01	U	ug/L	0.01	0.04
7/6/2009 11:40	Effluent	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2
7/6/2009 11:40	Effluent	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2
7/6/2009 11:40	Effluent	Pesticides	Chlorpyrifos Methyl	0.1	U	ug/L	0.1	0.4
7/6/2009 11:40	Effluent	Pesticides	Diazinon	0.05	U	ug/L	0.05	0.2
7/6/2009 11:40	Effluent	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.8
7/6/2009 11:40	Effluent	Pesticides	DDT-p,p'	0.03	U	ug/L	0.03	0.12
7/6/2009 11:40	Effluent	Pesticides	Endosulfan I	0.02	U	ug/L	0.02	0.08
7/6/2009 11:40	Effluent	Pesticides	Endosulfan Sulfate	0.02	U	ug/L	0.02	0.08
7/6/2009 11:40	Effluent	Pesticides	Alpha-BHC	0.01	U	ug/L	0.01	0.04
7/6/2009 11:40	Effluent	Pesticides	Delta-BHC	0.01	U	ug/L	0.01	0.04
7/6/2009 11:40	Effluent	Pesticides	Endrin Aldehyde	0.02	U	ug/L	0.02	0.08
7/6/2009 11:40	Effluent	Pesticides	Butylate	0.2	U	ug/L	0.2	0.8
7/6/2009 11:40	Effluent	Pesticides	Phorate	0.05	U	ug/L	0.05	0.2
7/6/2009 11:40	Effluent	Pesticides	Endosulfan II	0.02	U	ug/L	0.02	0.08
7/6/2009 11:40	Effluent	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
7/6/2009 11:40	Effluent	Pesticides	Metribuzin	0.1	U	ug/L	0.1	0.4
7/6/2009 11:40	Effluent	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6
7/6/2009 11:40	Effluent	Pesticides	Beta-BHC	0.01	U	ug/L	0.01	0.04
7/6/2009 11:40	Effluent	Pesticides	Heptachlor	0.01	U	ug/L	0.01	0.04

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/6/2009 11:40	Effluent	Pesticides	Alachlor	0.6	U	ug/L	0.6	2.4
7/6/2009 11:40	Effluent	Pesticides	Fonofos	0.1	U	ug/L	0.1	0.4
7/6/2009 11:40	Effluent	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
7/6/2009 11:40	Effluent	Pesticides	Parathion Methyl	0.1	U	ug/L	0.1	0.4
7/6/2009 11:40	Effluent	Pesticides	Aldrin	0.01	U	ug/L	0.01	0.04
7/6/2009 11:40	Effluent	Pesticides	Toxaphene	0.75	U	ug/L	0.75	3
7/6/2009 11:40	Effluent	Pesticides	Bromacil	0.2	U	ug/L	0.2	0.8
7/6/2009 11:40	Effluent	Pesticides	Ethoprop	0.1	U	ug/L	0.1	0.4
7/6/2009 11:40	Effluent	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8
7/6/2009 11:40	Effluent	Pesticides	Hexazinone	0.1	UJ	ug/L	0.1	0.4
7/6/2009 11:40	Effluent	Pesticides	Metolachlor	0.5	U	ug/L	0.5	2
7/6/2009 11:40	Effluent	Pesticides	DDD-p,p'	0.025	U	ug/L	0.025	0.1
7/6/2009 11:40	Effluent	Pesticides	DDE-p,p'	0.02	U	ug/L	0.02	0.08
7/6/2009 11:40	Effluent	Pesticides	Dieldrin	0.02	U	ug/L	0.02	0.08
7/6/2009 11:40	Effluent	Pesticides	Endrin	0.05	UJ	ug/L	0.05	0.2
7/6/2009 11:40	Effluent	Pesticides	Heptachlor Epoxide	0.02	U	ug/L	0.02	0.08
7/6/2009 11:40	Effluent	Pesticides	Azinphos Methyl	0.2	U	ug/L	0.2	0.8
7/6/2009 11:40	Effluent	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	1
7/6/2009 11:40	Effluent	Pesticides	Naled	0.8	U	ug/L	0.8	3.2
7/6/2009 11:40	Effluent	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
7/6/2009 11:40	Effluent	Pesticides	Methoxychlor	0.05	U	ug/L	0.05	0.2
7/6/2009 11:40	Effluent	Priority Organic Pollutants	2,6-Dinitrotoluene	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Benzo(g,h,i)perylene	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	16	U	ug/L	16	62
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Fluoranthene	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Hexachlorobutadiene	3.1	U	ug/L	3.1	12
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.1	U	ug/L	2.1	8.3
7/6/2009 11:40	Effluent	Priority Organic Pollutants	1,4-Dichlorobenzene	0.5	U	ug/L	0.5	2
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Bromodichloromethane	0.2	U	ug/L	0.2	1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Ethylbenzene	0.5	U	ug/L	0.5	2
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Toluene	0.5	U	ug/L	0.5	2
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Vinyl chloride	0.5	U	ug/L	0.5	2
7/6/2009 11:40	Effluent	Priority Organic Pollutants	trans-1,3-Dichloropropene	0.2	UJ	ug/L	0.2	1

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/6/2009 11:40	Effluent	Priority Organic Pollutants	2,4-Dinitrophenol	16	U	ug/L	16	62
7/6/2009 11:40	Effluent	Priority Organic Pollutants	2-Chloronaphthalene	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Isophorone	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.1	U	ug/L	3.1	12
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Phenanthrene	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Phenol	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	2-Chlorophenol	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	4-Chloro-3-methylphenol	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Benzo(b)fluoranthene	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.1	U	ug/L	3.1	12
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Chrysene	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Dimethyl phthalate	10	U	ug/L	10	41
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Hexachloroethane	3.1	U	ug/L	3.1	12
7/6/2009 11:40	Effluent	Priority Organic Pollutants	1,1,2,2-Tetrachloroethane	0.5	UJ	ug/L	0.5	2
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Bromoform	0.5	UJ	ug/L	0.5	2
7/6/2009 11:40	Effluent	Priority Organic Pollutants	2,4-Dichlorophenol	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	2,4-Dimethylphenol	10	U	ug/L	10	41
7/6/2009 11:40	Effluent	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1	U	ug/L	3.1	12
7/6/2009 11:40	Effluent	Priority Organic Pollutants	2-Nitrophenol	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	3,3'-Dichlorobenzidine	41	UJ	ug/L	41	170
7/6/2009 11:40	Effluent	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.1	U	ug/L	2.1	8.3
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Di-n-octyl phthalate	1	UJ	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1	U	ug/L	2.1	8.3
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Naphthalene	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Pentachlorophenol	3.1	U	ug/L	3.1	12
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Pyrene	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	1,1,2-Trichloroethane	0.2	U	ug/L	0.2	1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	1,2-Dichloroethane	0.2	U	ug/L	0.2	1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Bromomethane	0.5	UJ	ug/L	0.5	2
7/6/2009 11:40	Effluent	Priority Organic Pollutants	4-Nitrophenol	16	U	ug/L	16	62
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Acenaphthene	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Anthracene	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Benzo(k)fluoranthene	1	U	ug/L	1	4.1

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/6/2009 11:40	Effluent	Priority Organic Pollutants	1,1-Dichloroethene	0.5	U	ug/L	0.5	2
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Chloroform	0.2	U	ug/L	0.2	1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Dibromochloromethane	0.2	UJ	ug/L	0.2	1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Trichlorofluoromethane	0.5	UJ	ug/L	0.5	2
7/6/2009 11:40	Effluent	Priority Organic Pollutants	cis-1,3-Dichloropropene	0.5	U	ug/L	0.5	2
7/6/2009 11:40	Effluent	Priority Organic Pollutants	trans-1,2-Dichloroethene	0.5	U	ug/L	0.5	2
7/6/2009 11:40	Effluent	Priority Organic Pollutants	2,4,6-Trichlorophenol	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Butyl benzyl phthalate	5.2	U	ug/L	5.2	21
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Di-n-butyl phthalate	5.2	UJ	ug/L	5.2	21
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Diethyl phthalate	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Nitrobenzene	2.1	U	ug/L	2.1	8.3
7/6/2009 11:40	Effluent	Priority Organic Pollutants	1,2-Dichloropropane	0.5	U	ug/L	0.5	2
7/6/2009 11:40	Effluent	Priority Organic Pollutants	1,3-Dichlorobenzene	0.5	U	ug/L	0.5	2
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Benzene	0.2	U	ug/L	0.2	1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Carbon tetrachloride	0.2	UJ	ug/L	0.2	1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Chlorobenzene	0.2	U	ug/L	0.2	1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Chloromethane	0.5	UJ	ug/L	0.5	2
7/6/2009 11:40	Effluent	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Acenaphthylene	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Benzidine	100	U	ug/L	100	410
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Benzo(a)anthracene	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Benzo(a)pyrene	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	1,1,1-Trichloroethane	0.2	U	ug/L	0.2	1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	1,1-Dichloroethane	0.2	U	ug/L	0.2	1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	1,2-Dichlorobenzene	0.5	U	ug/L	0.5	2
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Methylene chloride	0.5	U	ug/L	0.5	2
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Trichloroethene	0.2	U	ug/L	0.2	1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Dibenzo(a,h)anthracene	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Fluorene	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Hexachlorobenzene	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.1	UJ	ug/L	3.1	12
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Chloroethane	0.5	U	ug/L	0.5	2

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/6/2009 11:40	Effluent	Priority Organic Pollutants	Tetrachloroethene	0.5	U	ug/L	0.5	2
7/6/2009 11:40	Effluent	Priority Organic Pollutants	2,4-Dinitrotoluene	1	U	ug/L	1	4.1
7/6/2009 11:40	Effluent	Field Parameter	Dissolved Oxygen	5.93		mg/L		
7/6/2009 11:40	Effluent	Field Parameter	Specific Conductance	1560		umhos/cm		
7/6/2009 11:40	Effluent	Field Parameter	pH	8.26				
7/6/2009 11:40	Effluent	Field Parameter	Sample Depth	0.1		m		
7/6/2009 11:40	Effluent	Field Parameter	Temperature	30.68		C		
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	1,1,2,2-Tetrachloroethane	0.5	UJ	ug/L	0.5	2
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	trans-1,2-Dichloroethene	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	Ethylbenzene	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	cis-1,3-Dichloropropene	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	Chloroform	0.2	U	ug/L	0.2	1
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	Chloroethane	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	Carbon tetrachloride	0.2	UJ	ug/L	0.2	1
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	1,2-Dichloroethane	0.2	U	ug/L	0.2	1
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	1,2-Dichlorobenzene	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	1,1-Dichloroethane	0.2	U	ug/L	0.2	1
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	1,2-Dichloropropane	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	Bromodichloromethane	0.2	U	ug/L	0.2	1
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	Chloromethane	0.5	UJ	ug/L	0.5	2
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	Methylene chloride	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	Trichlorofluoromethane	0.5	UJ	ug/L	0.5	2
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	1,3-Dichlorobenzene	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	1,4-Dichlorobenzene	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	Bromoform	0.5	UJ	ug/L	0.5	2
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	Bromomethane	0.5	UJ	ug/L	0.5	2
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	Tetrachloroethene	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	Vinyl chloride	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	m,p-Xylene	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	o-Xylene	0.2	U	ug/L	0.2	1
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	Chlorobenzene	0.2	U	ug/L	0.2	1
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	1,1-Dichloroethene	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	Benzene	0.2	U	ug/L	0.2	1
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	Dibromochloromethane	0.2	UJ	ug/L	0.2	1

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Result	Remark	Units	MDL	PQL
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	Toluene	0.5	U	ug/L	0.5	2
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	Trichloroethene	0.2	U	ug/L	0.2	1
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	trans-1,3-Dichloropropene	0.2	U	ug/L	0.2	1
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	1,1,1-Trichloroethane	0.2	U	ug/L	0.2	1
7/6/2009 11:14	Trip Blank	Priority Organic Pollutants	1,1,2-Trichloroethane	0.2	U	ug/L	0.2	1

Appendix F. Facility Summary

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: Heather Webber – 06/05/09	**Contact Number:** 904-807-3316
Facility Name (as it appears on permit): Georgia – Pacific Corporation – Palatka Operations	**Former Names:** N/A
NPDES Permit Number: FL0002763	**Permit Expiration Date:** 08/05/07
Physical Address: Highway 216, Palatka, FL 32177	
District: Northeast	**County:** Putnam
Function of Facility: This is a fully integrated pulp and paper mill producing both bleached and unbleached pulp and paper utilizing the Kraft process. Products include Kraft paper and finished tissue products.	
Facility Type: Industrial	**Permitted Capacity (MGD):** 40
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): D-001: Mean flow from 01/01/2008 through 12/31/2008 was 20.19 MGD. D-002: Mean flow from 01/01/2008 through 12/31/2008 was 4.01 MGD. D-003: N/A (Not yet constructed.)	
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**	

Appendix F. (continued)

Description of Sampling Location(s) - actual permit designation of permitted sampling point(s):
EFF-1 - (Monitoring point A): after final treatment but prior to actual discharge or mixing with the receiving waters EFF-3 - (Monitoring Point B/Outfall D-001) - Rice Creek mile point 3.4 (upstream from mouth) EFF-2 - (Monitoring Point C/Outfall D-002) - Rice Creek mile point 2.4 (upstream from mouth) SWU-R3 – Rice Creek mile point 1.4 PPI-1 – Internal bleach point plant sample SWU-B – Side stream oxygen injection monitoring point for outfall D-001 Rice Creek mile point 3.4 SWA-B – Mixing zone for Rice Creek mile point 3.4 SWU-C – Rice Creek mile point 2.4 SWA-C – Mixing zone for Rice Creek mile point 2.4
Description of Permitted Outfall(s):
Outfall D-001 (Monitoring Point B) - Shall be located near Rice Creek mile point 3.4 (upstream from mouth) and shall measure total pounds of oxygen injected per day and flow for one of two oxygenated effluent sidestreams. Outfall D-002 (Monitoring Point C) - Shall be located near Rice Creek mile point 2.4 (upstream from mouth) and shall measure total pounds of oxygen injected per day and flow for one of two oxygenated effluent sidestreams. Outfall D-003 – Pipeline to St. Johns River. NOT YET CONSTRUCTED.
Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility):
This is a 40 MGD average wastewater treatment facility providing primary clarification followed by secondary treatment consisting of 900 plus acres of facultative and aerobic lagoons. Wastewater treatment solids from the primary clarifier are pumped to sludge lagoons for dewatering. The dewatered wastewater treatment solids are land applied on-site. Treated effluent is discharged through an effluent riffle channel to Outfall D-001 with effluent for sidestream oxygenation discharging at Outfall D-002. A liquid oxygen injection system also injects pure oxygen at Outfall D-001 to offset the BOD of the effluent.

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)										
			Effluent Limitations				Monitoring Requirements			
Parameter	Units	Max/Min	Daily Average	Daily Min.	Daily Max.	Monthly Average	Monitoring Frequency	Sample Type	Monitoring Location Site Number	Notes
Flow	MGD		Report		Report		Continuous	Recorder	EFF-1	
Flow	MGD		Report		Report		Continuous	Recorder	EFF-3	Limit varies b/t Summer and Winter
Dissolved Oxygen (instream)	mg/l			Report			5 Days/Week	Grab or insitu	SWU-R3	
Chloroform	lbs/day		7.16		11.96		Weekly	24 hour composite	PPI-1	See Note 1 below
2,3,7,8 TCDD	pg/l				10.0		Monthly	24 hour composite	PPI-1	See Note 1 below
2,3,7,8 TCDF	pg/l				31.9		Monthly	24 hour composite	PPI-1	See Note 1 below
Trichlorosyringol	ug/l				<2.5		Monthly	24 hour composite	PPI-1	See Note 1 below
3,4,5 – trichlorocatechol	ug/l				<5.0		Monthly	24 hour composite	PPI-1	See Note 1 below
3,4,6 – trichlorocatechol	ug/l				<5.0		Monthly	24 hour composite	PPI-1	See Note 1 below
3,4,5 – trichloroguaiacol	ug/l				<2.5		Monthly	24 hour composite	PPI-1	See Note 1 below
3,4,6 – trichloroguaiacol	ug/l				<2.5		Monthly	24 hour composite	PPI-1	See Note 1 below
4,5,6 – trichloroguaiacol	ug/l				<2.5		Monthly	24 hour composite	PPI-1	See Note 1 below
2,4,5 - trichlorophenol	ug/l				<2.5		Monthly	24 hour composite	PPI-1	See Note 1 below
Tetrachloroguaiacol	ug/l				<5.0		Monthly	24 hour composite	PPI-1	See Note 1 below
2,4,6 – trichlorophenol	ug/l				<2.5		Monthly	24 hour composite	PPI-1	See Note 1 below
Tetrachlorocatechol	ug/l				<5.0		Monthly	24 hour composite	PPI-1	See Note 1 below

Appendix F. Effluent Limits

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)

			Effluent Limitations				Monitoring Requirements			
Parameter	**Units**	**Max/Min**	**Daily Average**	**Daily Min.**	**Daily Max.**	**Monthly Average**	**Monitoring Frequency**	**Sample Type**	**Monitoring Location Site Number**	**Notes**
2,3,4,6 – tetrachlorophenol	ug/l				<2.5		Monthly	24 hour composite	PPI-1	See Note 1 below
Pentachlorophenol	ug/l				<5.0		Monthly	24 hour composite	PPI-1	See Note 1 below
BOD, 5 day	lbs/day		3,500 Jun-Nov 7,170 Dec-May		7,000 Jun-Nov 14,340 Dec-May		3 days / week	24 hour composite	EFF-1	See Note 1 below
BOD, 5 day	mg/l		Report		Report		3 days / week	24 hour composite	EFF-1	See Note 1 below
Solids, Total Suspended	lbs/day		5,000 Jun-Nov 10,000 Dec-May		10,000 Jun-Nov 17,500 Dec-May		3 days / week	24 hour composite	EFF-1	See Note 1 below
Solids, Total Suspended	mg/l		Report		Report		3 days / week	24 hour composite	EFF-1	See Note 1 below
pH	s.u.			6.0	8.5		5 days / week	Grab or insitu	EFF-1	
Total Nitrogen, as N	mg/l				Report		Monthly	24 hour composite	EFF-1	See Note 1 below
Nitrogen, Kjeldah, Total (as N)	mg/l				Report		1 / month	Grab	EFF-1	
Total Ammonia (as N)	mg/l				Report		1 / month	Grab	EFF-1	
Color	pcu				Report		1 / month	Grab	EFF-1	
Fecal Coliform	#/100ml				800	200 (Mo.Geo. Mean)	1 / month	Grab	EFF-1	
Settleable Solids	ml/l/hr				0.1		1 / month	Grab	EFF-1	
Specific Conductance	umhos/cm				Report		1 / month	Grab or insitu	EFF-1	
Turbidity	NTU				Report		1 / month	Grab	EFF-1	

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)										
			Effluent Limitations				Monitoring Requirements			
Parameter	**Units**	**Max/Min**	**Daily Average**	**Daily Min.**	**Daily Max.**	**Monthly Average**	**Monitoring Frequency**	**Sample Type**	**Monitoring Location Site Number**	**Notes**
Dissolved Oxygen	mg/l			Report			5 days / week	Grab or insitu	EFF-1	
Oxygen Injected	lbs/day			Report			5 days / week	Log	SWU-B	
COD	mg/l				Report		1 / month	24 hour composite	EFF-1	See Note 1 below
Adsorbable Organic Halides (AOX)	lbs/day				1644	1077	Daily	24 hour composite	EFF-1	See Note 1 below
Iron, Total Recoverable	mg/l				Report		1 / Quarter	Grab	EFF-1	
Total Hardness as CaCO3	mg/l				Report		1 / Quarter	Grab	EFF-1	
2,3,7,8 – TCDD	pg/l		0.014				1 / Quarter	Composite	EFF-1	
Cadmium, Total Recoverable	ug/l				Report		1 / Quarter	Grab	EFF-1	
Lead, Total Recoverable	ug/l				Report		1 / Quarter	Grab	EFF-1	
Zinc, Total Recoverable	ug/l				Report		1 / Quarter	Grab	EFF-1	
Temperature	degrees F				Report		1 / Quarter	Grab or insitu	EFF-1	
Total Dissolved Gases	%				Report		1 / Quarter	Grab or insitu	SWA-B	
Flow	MGD		Report		Report		Continuous	Recorder	EFF-2	
Oxygen Injected	lbs/day			Report			5 days/ week	Log	SWU-C	
Total Dissolved Gases	%				Report		1 / Quarter	Grab or insitu	SWA-C	

Note 1: 24 hour composite consists of 6 representative separate grab samples taken every 4 hours of continuous sampling

Appendix F. (continued)

PART I: Continued	
Receiving Waters: Rice Creek	**Classification (indicate whether fresh or marine):** Class III fresh surface water

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

Acute Whole Effluent Toxicity Monitoring Program

1. Routine Test Requirements

a. The Permittee shall conduct 96 hour acute static renewal toxicity tests using the *Ceriodaphnia dubia* (water flea) and the *Cyprinella Leedsi* (bannerfin shiner). All tests shall be 24-hour composite samples and shall consist of 6 representative separate grab samples taken every 4 hours or the 24 hour accumulation of a continuous sampler. The toxicity tests specified above shall be conducted using a control (0% effluent) and a test concentration of 100% final effluent. These tests are referred to as "routine tests".

b. If control mortality exceeds 10% for either species in any test, the test(s) for that species (including the control) shall be repeated. A test will be considered valid only if control mortality does not exceed 10% for either species. If, in any separate test, 100% mortality occurs prior to the end of the test, and control mortality is less than 10% at that time, that test (including the control) shall be terminated with the conclusion that the sample demonstrates a violation of the acute toxicity limit.

2. Additional Testing Requirements

a. If unacceptable acute toxicity (greater than 20% mortality in any grab sample of 100% effluent) is determined in a routine test, the Permittee shall conduct a minimum of three (3) valid additional 96 hour acute static renewal definitive tests on the specie(s) indicating toxicity. The first test shall begin within 7 days of the failed routine test and be conducted weekly thereafter until three valid additional tests are complete. The additional tests sample collection requirements and test acceptability criteria specified in paragraphs '1.a.' and '1.b.' above must be met for the tests to be considered valid. All additional definitive tests shall be conducted with a control (0% effluent) and effluent concentrations of 6.25%, 12.5%, 25%, 50%, and 100%. The dilution series may be modified in the second and third tests to more accurately identify the toxicity, such that at least two dilution's above and two dilution's below the target toxicity and a control (0% effluent) are run. The additional tests will be used to determine if the toxicity found in the routine test is still present.

b. Results for each additional test will include the determination of LC50 values with 95% confidence limits. Results from the additional tests, required due to unacceptable acute toxicity in the "routine" tests, shall be submitted in a single report prepared according to EPA/600/4-90/027F, Section 12, Report Preparation (or the most current edition) and submitted within thirty (30) days of completion of the three valid additional tests. If the additional tests demonstrate continued unacceptable toxicity, the Permittee will meet with the Department within 30 days of the report submittal to identify corrective actions necessary to remedy the unacceptable toxicity.

c. For all tests conducted, a final effluent sample must be used.

Interim Chronic Whole Effluent Toxicity Monitoring Program

1. The Permittee shall conduct a daphnid, Ceriodaphnia dubia, Survival and Reproduction test and a fathead minnow, Pimephales promelas, Larval Survival and Growth Test. These tests shall be conducted using a control (0% effluent) and one test concentration of 100%. All test results shall be statistically analyzed according to the Appendix in EPA/600/4-91-002, or the most current edition.
2. For each set of tests conducted, a 24-hour composite sample of final effluent shall be collected and used per the sampling schedule discussed in EPA/600/4-91/002, Section 8 (or the most current edition). All test solutions shall be renewed daily. Two additional composite samples collected on day two and day four of the test, used as renewal solutions, shall be collected according to the protocol.
3. If control mortality exceeds 20% for either species in any test, the test(s) for that species (including the control) shall be repeated. A test will be considered valid only if control mortality does not exceed 20% for either species. If, in any separate test, 100% mortality occurs prior to the end of the test, and control mortality is less than 20% at that time, that test (including the control) shall be terminated with the conclusion that the sample demonstrates un-acceptable acute toxicity. Additionally, all tests must meet the acceptability criteria for each species as defined in EPA/600/4-91/002 Section 13.11 and Section 11.11, respectively.
4. The toxicity tests specified above shall be conducted once every three months during the interim period. These tests are referred to as "routine" tests. Upon the completion of four valid tests during the final period which demonstrate that no chronic toxicity has occurred, the Permittee may petition the Department for a reduction in monitoring frequency.

Appendix F. (continued)

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

Administrative Order No. 039-NE:

On June 22, 1994, temporary operation permit No. IT54-220788 was issued for the discharge of the mill effluent to Rice Creek. The temporary operation permit included a compliance schedule which required Georgia-Pacific Corporation to apply for and construct a new discharge pipeline to the St. Johns River. On July 1, 1994, the Department received an application for the construction of the new discharge pipeline to the St. Johns River. On July 10, 1995, the Department received the application for renewal of existing operation permit FL0002763 (Permit) which was combined with the existing state temporary operation permit to become the National Pollutant Discharge Elimination System (NPDES) permit. The applications for the new discharge to the St. Johns River and for the renewal of the NPDES Permit FL0002763 were deemed complete on September 30, 1996. The associated wastewater permit constitutes Department approval for the construction and operation of the pipeline system to the St. Johns River.

This Order establishes the overall schedule for the construction of the pump station, force main and required appurtenances for the final effluent discharge to the St. Johns River, in accordance with Part III. 4. of this Order and for meeting the new Cluster Rule discharge requirements for bleached kraft mill as required by Part I.B.13. of NPDES Permit FL0002763 (in accordance with the revised Title 40, chapter I of the Code of Federal Regulations (CFR) Part 430, Subpart B, promulgated April 15, 1998). This is consistent with Section 403.151 and 403.088, F.S., which allows the Department to establish a schedule for compliance with a permit or rules of the Department.

The Permittee shall be allowed to discharge to Rice Creek from Outfalls D-001 and D-002, mile points 2.4 and 3.4 respectively, and shall comply with the interim effluent limitations and monitoring requirements outlined in Part III. 2., except as specifically indicated in Part III 4. and 5., of this Administrative Order. Outfall D-001 is located at latitude 29° 40'44" N, longitude 81°41'33" W, Outfall D-002 is located at latitude 29°41'14" N, longitude 81°40'58" W, and the proposed Outfall D-003 is at latitude 29°41'13" N, longitude 81°38'24" W. This interim discharge is being authorized to allow the Permittee to install manufacturing process improvements to improve the effluent water quality to the extent that the effluent discharge may remain in Rice Creek, as opposed to construction of a pipeline for a direct discharge to the St. Johns River via Outfall D-003, in accordance with Part III 4. and 5. of this Administrative Order.

Facility Mixing Zone Details (if applicable):

A mixing zone for total dissolved gases (TDG) is hereby established for the side stream discharges into Rice Creek. The Permittee's discharges shall not cause an exceedance of the Chapter 62-302.530(67) F.A.C., Class III fresh water standard of 110% of the saturation value for gases at the existing atmosphere and hydrostatic pressures outside the boundaries of the mixing zones described below.

Milepoint 2.4

The mixing zone shall extend linearly upstream and downstream from the discharge point such that the cumulative upstream and downstream distances from the discharge point does not exceed 725 meters, in the tidal influenced areas of Rice Creek.

Milepoint 3.4

The mixing zone shall extend linearly upstream and downstream from the discharge point such that the cumulative upstream and downstream distances from the discharge point does not exceed 225 meters in the tidal influenced areas of Rice Creek.

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

Date	Parameter and Units	Limit	Result
August 2008	Dissolved Oxygen (calculated value)	0.0 mg/L	-2.2 mg/L
August 2008	Dissolved Oxygen Injected (calculated value)	0.0 lbs/day	1477 lbs/day
August 2008	TSS	10000 lbs/day	10408 lbs/day

Appendix F. (continued)

Describe previous FYI and WQBEL study: From the 2007 FYI: Nutrients were substantially higher at the Test Site compared to the Control Site. For example, nitrate+nitrite was an order of magnitude higher and total phosphorus was eight times higher at the Test Site compared to the Control Site. The effluent conductivity was elevated above the facility's permit limit and the Class III Criterion ($\leq$1,275 μmhos/com, 62-302(23)530 F.A.C.). Elevated conductivities are known to reduce the presence of sensitive macroinvertebrate taxa (FDEP 2005). The Shannon-Weaver Diversity Index was marginally better at the Test Site compared to the Control Site in the quantitative Hester-Dendy samples; however, there was an increase in nutrient tolerant taxa at the Test Site which may be a cause for concern. Additional monitoring and permit requirements may be warranted based on these results.
Describe previous or current Enforcement Actions (including WLs): SFCO 07-1969: Unauthorized Discharge of approximately 750 gallons of mixed rainwater and process water to Rice Creek. Penalty was paid. CO is closed in LCT.
Describe any violations or problems noted in previous inspection: No deficiencies noted in July 22, 2008 inspection.
Discuss whether DMR trends within previous five years are improving or declining: Effluent color and chloroform levels are trending downward. Most other parameters remain steady.
Additional Comments (this should include a trend of the Effluent, i.e. if the facility is now Reuse): N/A

Appendix F. (continued)

PART II: Sampling Event Information	
Date(s) sample collected:	**Sampler(s):**
Temperature (Deg C):	**pH (SU):**
Dissolved Oxygen (mg/L):	**Conductivity (umhos/cm):**
Total Residual Chlorine (mg/L):	**Total Residual Chlorine - after Disinfection (mg/L):**
Method of Chlorination:	**Method of De-chlorination:**
Flow During Sample Collection for each outfall(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):	
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:	

Appendix G. EPA End Sheet

The Bioassay of the Georgia Pacific Corporation - Palatka Operations facility effluent sampled on July 6, 2009. NPDES #FL0002763.

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 0 2 7 6 3 11	12 0 9 0 7 0 6	18 **B**	19 **S**	20 2

Remarks

66

The Priority Pollutants Analysis of the Georgia Pacific Corporation - Palatka Operations facility effluent sampled on July 6, 2009. NPDES #FL0002763.

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 0 2 7 6 3 11	12 0 9 0 7 0 6	18 **B**	19 **S**	20 2

Remarks

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Biological Analyses of the Georgia Pacific Corporation - Palatka Operations facility effluent sampled on July 6, 2009. NPDES #FL0002763.

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 0 2 7 6 3 11	12 0 9 0 7 0 6	18 **B**	19 **S**	20 2

Remarks

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