

Bioassays of

USN NAS Jacksonville Wastewater Treatment Facility (ADDENDUM)

Duval County

NPDES #FL0000957

Sampled December 11, 2006

March 2007

Biology Section
Bureau of Laboratories
Division of Resource Assessment and Management

Quality Manual No. 870346G
NELAC Certification No. E31780

ADDENDUM to: Bioassays of

USN NAS Jacksonville Wastewater Treatment Facility

May 2007

After the March 2007 release of the report on the December 11, 2006, sampling of the USN NAS Jacksonville WWTF, it was determined that the bioassay sample contained total residual chlorine (TRC) because the sample was taken prior to dechlorination in the treatment process. The sample was taken at PPI-1, the measurement and sampling point for post-disinfection at the junction box near the chlorine contact chamber, which is not the compliance sampling location for whole effluent toxicity. Toxicity was observed in the dechlorinated aliquot of the sample, suggesting that the sample contained toxicants other then chlorine.

USN NAS Jacksonville Wastewater Treatment Facility, Building 826, NAS Jax, U.S. Highway 17, Jacksonville, Duval County, Florida, NPDES #FL0000957. Effluent samples for this facility were collected on December 11, 2006.

Introduction

The USN NAS Jacksonville Wastewater Treatment Facility uses the activated-sludge process to treat domestic wastewater to secondary standards. The facility has a total flow-through-plant design flow of 3.0 million gallons per day (MGD) average annual daily flow (AADF). The AADF from December 2005 through November 2006 to surface water through Outfall D-001 was 0.695 MGD, and the AADF discharged through reuse system R-001 was 0.23 MGD. The facility consists of an automatic bar screen and grit removal system, flow splitter box, flow equalization basin, primary and secondary clarification, aeration basin, aerobic digester, gravity thickener, sludge drying beds, tertiary filtration, chlorine contact chamber, and a dechlorination unit. Chlorine gas and sulfur dioxide are used for disinfection and dechlorination, respectively. Final treated effluent is either discharged through discharge location D-001 to the Class III Marine waters of the St. Johns River or reused as reclaimed water via a slow-rate public access spray irrigation system (R-001). Outfall D-001 is approximately 213.4 m (700 feet) in length, discharges at a depth of approximately 1.22 m (4 feet), and is located approximately at latitude 30º 14' 29" N and longitude 81º 40' 33" W. Residuals are disposed of by land application or in a Class I or Class II solid waste landfill.

The facility is current operating under Administrative Order AO 71 NE which was issued to allow sufficient time for the facility to complete research for a mixing zone for cyanide through the existing three-port diffuser (outfall) in the St. Johns River. The facility has a mixing zone for total recoverable copper. The mixing zone, a rectangle (60 m long by 310 m wide) capped at both ends by semi-circles (with a radius of 155 m), has an area of 94,325 m^2. A review of Discharge Monitoring Report (DMR) data revealed violations of permit limits for surfactants (April 2005); pH (June 2005); pH and total residual chlorine (February, March, and July 2006); cyanide (May, July, August and September 2006). During the last performance audit inspection (PAI)/compliance evaluation inspection (CEI), performed on April 16, 2006, the facility was rated *In Compliance*.

Total Maximum Daily Loads (TMDLs) are being developed for the receiving waters, and after reviewing, loading will be established for all dischargers to the lower St. Johns River. This waterbody segment (WBID #2213E) is on the 303 (d) list of impaired waters. Due to the TMDL program, new water quality based effluent limits (WQBELs) may be developed for this facility. (Facility information provided by Chet McGhee of FDEP Northwest District.)

Methods

Samples were collected from the PPI-1 NPDES sampling point for Outfall D-001 by Chet McGee and Jessica Landkrohn (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 48-hour acute screening toxicity tests and algal growth potential test were performed following internal DEP SOPs TA07_01, TA07_02, and TA08_01 through TA08_09. All internal DEP SOPs are available on the web at: http://www.floridadep.org/labs/cgi-bin/sop/biosop.asp. While the 48-hour acute screening toxicity test does not reflect the permit required conditions, the Department uses it to provide reasonable assurance that the facility does not adversely affect waters of the state.

Total residual chlorine (1.98 mg/L) was detected in the bioassay sample in the laboratory. An aliquot of this sample was dechlorinated by the addition of sodium thiosulfate (0.025 N) at a rate of 2 mL per liter of sample to neutralize the chlorine. Bioassays were performed on the dechlorinated aliquot and the original sample. The same concentration of sodium thiosulfate was added to the dechlorinated test controls. The purpose of the dechlorinated test controls was to confirm that there was no adverse effect of adding

sodium thiosulfate to the sample. There was 10% mortality in the dechlorinated controls of both the *Ceriodaphnia dubia* and *Cyprinella leedsi* dechlorinated sample tests.

An aliquot of the AGP sample was salinity-adjusted to 7 ppth to meet the minimum salinity requirements of the marine test species.

Toxicity Test Results

Tests were performed December 12-14 2006.

Ceriodaphnia dubia 48-hour acute screening bioassay –	LC_{50} < 100%, 100% mortality* in 100% sample at 48 hours
Cyprinella leedsi 48-hour acute screening bioassay –	LC_{50} < 100%, 100% mortality* in 100% sample at 48 hours
Ceriodaphnia dubia 48-hour acute screening bioassay – **Dechlorinated sample**	LC_{50} > 100%, 10% mortality* in 100% sample at 48 hours
Cyprinella leedsi 48-hour acute screening bioassay – **Dechlorinated sample**	LC_{50} > 100%, 25% mortality* in 100% sample at 48 hours

The dechlorinated aliquot of the bioassay was not acutely toxic to the *Ceriodaphnia dubia* test organisms but showed a low level of toxicity to the *Cyprinella leedsi* test organisms. The cause of the toxicity in the dechlorinated sample aliquot was not determined. The aliquot of the bioassay sample containing total residual chlorine (TRC) was acutely toxic to both tests species, producing 100% mortality within 10 minutes of test initiation in the *C. leedsi* test and 100% mortality within one hour in the *C. dubia* test. The toxicity in the original sample was primarily attributed to the TRC concentration in the sample. TRC levels as low as 0.028 mg/L have been found to be acutely toxic to some freshwater fish and invertebrates (EPA *Quality Criteria for Water* 1986, EPA 44015-86-001, 1986).

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

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

Algal Growth Potential

The effluent Algal Growth Potential (AGP) was 316 mg dry wt/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. Raschke and Shultz (1987) found that AGP values above 5.0 mg dry weight/L represent a "problem" threshold for fresh receiving waters, implying nutrient enrichment. The analytical chemistry suggests that the effluent is nitrogen limited. The predicted AGP based on inorganic nitrogen concentrations was 723 (±20%) mg dry wt/L (Table 1; Miller et al. 1978).

The effluent Algal Growth Potential (AGP) was 932 mg dry wt/L of the saltwater species *Dunaliella tertiolecta.* Raschke and Shultz found that AGP values above 10.0 mg dry weight/L represent a "problem" threshold for marine receiving waters, implying nutrient enrichment (personal communication with Ron Raschke USEPA Region 4, 1987). The greater dry weight obtained in the saltwater AGP test can be partially attributed to greater weight production per unit of nutrient in the saltwater test species (Maloney

et al, 1974) when compared to the freshwater test species. Other undetermined factors also likely attributed to the dry weight differential.

See Table 1 for AGP results.

Chemistry Results

Total residual chlorine was detected in the bioassay sample in the laboratory at a concentration of 1.98 mg/L. Total ammonia was not detected in the bioassay sample in the laboratory. Total ammonia was detected in the sample collected and preserved for chemical analysis between the laboratory method detection limit (MDL) and practical quantization limit (PQL). Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was < 0.02 mg/L.

Cadmium, copper, iron, and zinc were detected in the effluent at levels that comply with Class III marine water quality criteria (62-302.530, F.A.C.). Aluminum, arsenic, and nickel were detected between the MDL and PQL. Chromium-III was also detected in the effluent.

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 PPI-1 for this facility on December 11, 2006, was acutely toxic to both test species during the 48-hour acute screening bioassays. Toxicity can be attributed primarily to total residual chlorine in the effluent; however, the dechlorinated effluent sample was somewhat toxic to the fish test species. The cause of the toxicity in the dechlorinated sample aliquot was not determined. The effluent AGP result exceeded the "problem" threshold for marine receiving waters.

Literature Cited

Maloney, T. E., W. E. Miller, and D. T. Specht. 1974. The Marine Algal Assay Procedure: Bottle Test. National Environmental Research Center Office of Research and Development. U. S. EPA, Corvallis, Oregon. 43 p.

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) of the freshwater species Psuedokirchneriella subcapitata f*or total soluble nitrogen (TSIN) and total nitrogen (TN) limitation, the salt adjusted AGP for the saltwater species* Dunaliella tertiolecta, *and ratios of nitrogen to phosphorus for samples collected from USN NAS Jacksonville Wastewater Treatment Facility on December 11, 2006.*

Location	AGP (measured)	Predicted AGP (TSIN) ± 20%	Predicted AGP (TN) ± 20%	AGP (salt adjusted)	Inorganic N:P ratio	Total N:P ratio
Effluent Samples	316	722.65 ± 144.53	744.8 ± 148.96	932	7.61	6.76

Table 2. Effluent limits, Class III Marine Criteria, and chemical and microbiological data for samples collecgted from USN NAS Jacksonville Wastewater Treatment Facility on December 11, 2006.

USN NAS Jacksonville Wastewater Treatment Facility. NPDES#FL0000957	Class III Marine Stds	Effluent Limits	Effluent Samples
Organic Constituents (µg/L)			
None Detected	-	-	-
Metals (µg/L unless otherwise noted)			
Aluminum	≤ 1,500	-	14 I
Arsenic	≤ 50	-	0.9 I
Cadmium	≤ 9.3	-	0.4
Calcium (mg/L)	-	-	48.8
Chromium-III	-	-	1.28
Copper	≤ 3.7	≤ 2.9 s	3.61
Iron	≤ 300	-	73
Lead	≤ 8.5	≤ 5.6 s	0.2 U
Magnesium (mg/L)	-	-	18.7
Nickel	≤ 8.3	≤ 8.3 s	3.3 I
Selenium	≤ 71	-	0.5 U
Silver	≤ 2.3	-	0.025 U
Zinc	≤ 86	-	24
Nutrients (mg/L)			
Ortho-phosphate	-	-	2.5
Total Phosphorus	-	Report	2.9 A
Ammonia	-	Report	0.017 I
Unionized Ammonia	-	-	< 0.02 c
Nitrate+Nitrite	-	-	19
Total Kjeldahl Nitrogen	-	-	0.6 I
Organic Nitrogen	-	-	0.58 c
Total Nitrogen	-	-	19.6 c
General Physical and Chemical Parameters			
Total Suspended Solids (mg/L)	-	≤ 60 s	4 U
Dissolved Oxygen (mg/L)	≥ 4.0	Report	9.1
pH (S.U.)	6.5-8.5	6.5-8.5	7
Conductivity (umhos/cm)	-	-	773
Temperature (°C)	-	Report	16
Total Residual Chlorine (mg/L)	≤ 0.01	≤ 0.01 s	1.98 £
CBOD (mg/L)	-	≤ 60 s	3.4 A
Cyanide (µg/L)	≤ 1.0	≤ 1.0 s	0.005 U
Oil and Grease (mg/L)	≤ 5.0	≤ 5.0 s	2 If
Surfactant (mg/L)	≤ 0.5	≤ 0.5 s	-
Flow (MGD)	-	3.0 a#	0.925 a#
Hardness (mg/L)	-	-	198.9 c
Microbiology (# counts/100ml)			
Fecal Coliforms-Membrane Filter	≤ 800 s	≤ 800 s	2 U*

Value exceeds the Class III Marine Water Quality Criteria (62-302, F.A.C.) and/or Effluent Limits

a - Annual average

c - Calculated value

f - Oil and grease was detected in the field blank between the MDL and PQL

s - Single sample

A - Average

I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

U - Material analyzed for but not detected; value reported is the method detection limit

£ - Analyses conducted in Biassay lab

- Flow limit and data are for combined flow of D-001 and reuse R-001

* - Analysis performed at Northeast District laboratory

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Request Number: RQ-2006-12-11-21
US NAS Jacksonville

Event ID *

Requester: Shannan Bogdanov
Field Report Prepared By: J. PARIS

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

Collected By: C. MCGHEE / J. LINDKRON
Send Final Report To: Melissa Long
Sampling Agency: FDEP

Lab ID *	Location	Collection (begin)	Collection (end)	Bottle Group(s)**
	NAS JAX	☐ Comp ☑ Grab Date 12/11/06 Time 10:40 ☑ Eastern ☐ Central	Date 12/11/06 Time 11:29 ☑ Eastern ☐ Central	A
	Field ID: EFFLUENT	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L): 9.84	Storet Station Number
	Matrix (Include type e.g. Salt, Fresh, etc	Temp (C): 16°	pH: 6.99	Sample Depth: 0.5 ☐ m ☑ ft; 0.38; 773 ☑ Salinity (PPTh) ☑ Sp Conductance (umho/cm)	NPDES Number
	Latitude o ' "	Longitude o ' "	Comments	

Lab ID *	Location	Collection (begin)	Collection (end)	Bottle Group(s)**
	NAS JAX	☐ Comp ☑ Grab Date 12/11/06 Time 11:27 Eastern ☐ Central	Date 12/11/06 Time 11:41 Eastern ☐ Central	B
	Field ID: BLANKS	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	Collection (begin)	Collection (end)	Bottle Group(s)**
		☐ Comp ☐ Grab Date Time Eastern ☐ Central	Date Time Eastern ☐ Central	
	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	Collection (begin)	Collection (end)	Bottle Group(s)**
		☐ Comp ☐ Grab Date Time Eastern ☐ Central	Date Time Eastern ☐ Central	
	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	

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
			ABJ	12/12/06 0840				

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

FDEP Biology Section - Acute Screen Bioassay Bench Sheets

Facility: USN NAS JACKSONVILLE WWTF

Address : BUILDING 826, NAS JAX U.S.#17

City: JACKSONVILLE **County:** DUVAL

Contact/District: NORTHEAST / JENNIFER PARIS

NPDES Permit #: FL 0040495

LIMS Job # TCH - 2006-12-12-03-01 **LIMS Sample #:** 97258

Lims Data Entry: 12-20-06 MF Data Entry Verification: BA 12-20-06

Sample Collection: Date: 12-11-06 Time: 10:46

Hold Time Start: Date: 12-11-06 Time: 10:46

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.

Light Intensity : 50 - 100 ft. candles.

Photoperiod : 16 hours light 8 hours dark.

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

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

Initial sample handling:

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

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

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

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

Dechlorination: (yes) no 2.0 mL of 0.025N Sodium Thiosulfate per liter of sample. Final TRC: 0.055 mg/L

Comments:

100% Sample caused total mortality of fish species within 10 minutes of loading, JD 12-12-06
Total residual chlorine of original sample was 1.98 mg/L
Sample dechlorinated by the addition of 2.0 ml of (aliquot of) 0.025N Sodium thiosulfate per liter. Residual chlorine in dechlorinated aliquot was 0.055 mg/L. MF 12-12-06

100% mortality in the 100% sample test concentration of the water flea test within 1 hour of test initiation) MF 3-20-07

Temperature Range °C

Incubator # 2 Range 24.4-26.1

Room B248: 23.4-25.2

Waterbath: N/A

Sample Validation:

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

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

Investigators' Signatures

Buzz Andrew
Jason Daniel
Marshall Faircloth
Patsy Tchaikel
Erin Wilcox

REVIEWER

Water Quality Parameters	20% DMW	Moderately Hard Water/ (Well Water)	Salt Water ASW NSW Test 1	Salt Water ASW NSW Test 2	Other: Dechlorinity sample	Original Sample	Method	Measured by	Verified by
Field Total Residual Cl_2 (mg/L):	N/A	N/A	N/A	N/A	—	NT measured	—	—	MF
Lab Total Residual Cl_2 (mg/L):	<0.03	<0.03			0.055	1.98	HACH	~~PW~~	BA
Alkalinity (mg/L as $CaCO_3$):	82	146			T	47	HACH	BA/CW	~~PP~~
Hardness (mg/L as $CaCO_3$):	94	138			—	184	HACH	BA/CW	~~PP~~
Total Ammonia (mg/L as N):	<0.017	<0.017			—	<0.017	DENVER	MF	~~PP~~
Salinity (ppth):	<1	<1			<1	<1	~~YSI~~/ Mettler	MF	BA

V 1.4 9/12/05

Appendix B. (continued)

FDEP Biology Section - Bioassay Survival Sheet

LIMS Sample #: 972518 | Test #: 1 | Test Started: Date 12/12/06 Time: 13:40
Organism: C. dubia | SOP #: TA 07_01 | Test Ended: Date 12-14-06 Time: 1150
Organism Batch: 51-06 | Diluent/ Batch: DMW 132-06
Organism Age: < 24 hours | Food: YCT (circled) P. subcapitata (circled) Artemia
Chamber Size: 30 mL | Batch: 2-06 5-06 —
Test Volume: 20 mL | Feeding: Prior to test (circled) Prior to renewal - Daily

Concentration	Replicate	Chamber #	Test Hour: 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Ctrl	A	5	5	5	5			
	B	5	5	5	5			
	C	5	5	5	5			
	D	5	5	5	5			
100%	A	5	5 0 5D (A)	—	—			
	B	5	5 0 5D	—	—			
	C	5	5 0 5D	—	—			
	D	5	5 0 5D	—	—			
Dechlorinated Control	A	5	5	5	5			
	B	5	5	5	4 1D			
	C	5	5	5	4 1D			
	D	5	5	5	5			
Dechlorinated 100%	A	5	5	5	5			
	B	5	5	5	3 2D			
	C	5	5	5	5			
	D	5	5	5	5			
Organisms loaded by: BA		Checked by:	[redacted]	mF	mF			

Loading Verified by: mF

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

Comments: (A) 100% mortality in 100% sample by 3PM (1500), about one hour after exposure -BA- 12-12-06
[There was 10% mortality in the dechlorinated sample aliquot and there was 10% mortality in the dechlorinated control MF 3-20-07]

Test Results:
% mortality in 100% sample: 100%
LC_{50}: < 100 If Calculated: 95% CI__________ Method:__________

Screening Tests:
Report LC50 as >100%, =100%, or <100%.
Substitue highest test concentration used if other than 100% (example: Ocean outfall tested at 30% concentration).

V 2.1 11/01/2005

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Appendix B. (continued)

FDEP Biology Section - Bioassay Survival Sheet

LIMS Sample #: 972518 Test #: 2 Test Started: Date 12.12.06 Time: 1300
Organism: C.leedsi SOP #: TA 07_02 Test Ended: Date 12-14-06 Time: 12:00
Organism Batch: 29-06 Diluent/ Batch: Well H20 1.12.11.06
Organism Age: 11 days Food: YCT P. subcapitata (Artemia) Lot : GSL-536-90
Chamber Size: 1000 mL Batch: 24-06
Test Volume: 500 mL Feeding: (Prior to test) - Prior to renewal - Daily

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Ctrl	A	E1	5	4 10	4			
	B	E2	5	5	5			
	C	E3	5	5	4 10			
	D	E4	5	5	5			
100%	A	E5	5	0 SD (A)	—			
	B	E6	5	0 SD	—			
	C	E7	5	0 SD	—			
	D	E8	5	0 SD	—			
Dechlorinated Control	A	A1	5	4 10	4			
	B	A2	5	5	5			
	C	A3	5	4 10	4			
	D	A4	5	5	5			
Dechlorinated 100%	A	A5	5	4 10	4			
	B	A6	5	4 10	4			
	C	A7	5	5	5			
	D	A8	5	3 20	2 10			

Organisms loaded by: AV Checked by: MF MF
Loading Verified by: MF

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

Comments: (A) 100% mortality in 100% sample within 10 minutes of test organism exposure. MF 12-11-06
25% mortality in the dechlorinated sample test at 48 hours. MF 3-20-07 Therefore, 10% dechlorinated Control mortality MF 3-20-07

Test Results:
% mortality in 100% sample: 100%
LC_{50}: < 100 If Calculated: 95% CI _____ Method: _____

Screening Tests:
Report LC50 as >100%, =100%, or <100%.
Substitue highest test concentration used if other than 100% (example: Ocean outfall tested at 30% concentration).

V 2.1 11/01/2005

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FDEP Biology Section - Bioassay Parameter Sheet

LIMS Sample # : 972518 Test #: 1 of 2

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

Concentration Ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M	(A)	A			
pH (S.U.)	7.4	~~7.7~~	7.7			
Temperature °C	24.3	~~24.4~~	24.4			
Dissolved Oxygen mg/L	8.0		7.4			
Conductivity ~~umhos~~ mmhos	174	187	187			
(initials) Measured by:	~~BA~~		BA			
(initials) Recorded by:	~~BA~~		BA			

Comments:

(A) Data entry error - no data at 24 hours. should be in 48 hour spaces - noted to BA by MF 12-14-06

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M	(A)	A			
pH (S.U.)	7.2					
Temperature °C	24.8	~~24.4~~				
Dissolved Oxygen mg/L	8.0					
Conductivity (umhos) mmhos	790					
(initials) Measured by:	~~BA~~		BA			
(initials) Recorded by:	BA		BA			

Comments:

Concentration Dechlor ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M	(A)	A			
pH (S.U.)	7.8	7.7	7.7			
Temperature °C	24.5	~~24.4~~	24.4			
Dissolved Oxygen mg/L	8.0		7.6			
Conductivity ~~umhos~~ mmhos	186		201			
(initials) Measured by:	BA		BA			
(initials) Recorded by:	BA		BA			

Comments:

Concentration Dechlor 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M	(A)	A			
pH (S.U.)	7.3	~~7.6~~	7.6			
Temperature °C	24.5	~~24.4~~	24.4			
Dissolved Oxygen mg/L	8.0		7.7			
Conductivity ~~umhos~~ mmhos	797	~~835~~	835			
(initials) Measured by:	BA		BA			
(initials) Recorded by:	BA		BA			

Comments:

V 2.0 2/24/04

FDEP Biology Section - Bioassay Parameter Sheet

LIMS Sample # : 972518 **Test #:** 2 of 2

TEST SOP #: TA07_02 **Test Species:** *Ceriodaphnia dubia* *Cyprinella leedsi* *Pimephales promelas* *Americamysis bahia* *Menidia beryllina* Other:_____

Concentration Ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	~~A~~ C			
pH (S.U.)	7.5	7.7	7.8			
Temperature °C	~~26.0~~ BA	24.9	24.7			
Dissolved Oxygen mg/L	7.2	6.5	7.5			
Conductivity ~~µmhos~~ mmhos	267	283 mf 286	286			
(initials) Measured by:	BA	mf	BA			
(initials) Recorded by:	BA	mf	BA			

Comments: (A) 26.0 °BA

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A					
pH (S.U.)	7.2 BA					
Temperature °C	25.6					
Dissolved Oxygen mg/L	7.3					
Conductivity ~~µmhos~~ mmhos	776					
(initials) Measured by:	BA					
(initials) Recorded by:	BA					

Comments: Terminated at 96 hr + 10 ~~minutes~~ minutes. all organisms dead mf 12-11-06

Concentration Ctrl Dechlorinated	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	7.7	7.8	7.9			
Temperature °C	25.8	25.0	24.5			
Dissolved Oxygen mg/L	7.4	6.6	7.3			
Conductivity ~~µmhos~~ mmhos	289	293	296			
(initials) Measured by:	BA	mf	BA			
(initials) Recorded by:	BA	mf	BA			

Comments:

Concentration 100% Dechlorinated	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	7.2	7.5	7.7			
Temperature °C	25.3	24.8	24.9			
Dissolved Oxygen mg/L	7.4	6.9	7.2			
Conductivity ~~µmhos~~ mmhos	788	789	805			
(initials) Measured by:	BA	mf	BA			
(initials) Recorded by:	BA	mf	BA			

Comments:

V 2.0 2/24/04

Appendix C. SRT Bench Sheets and Statistical Analysis

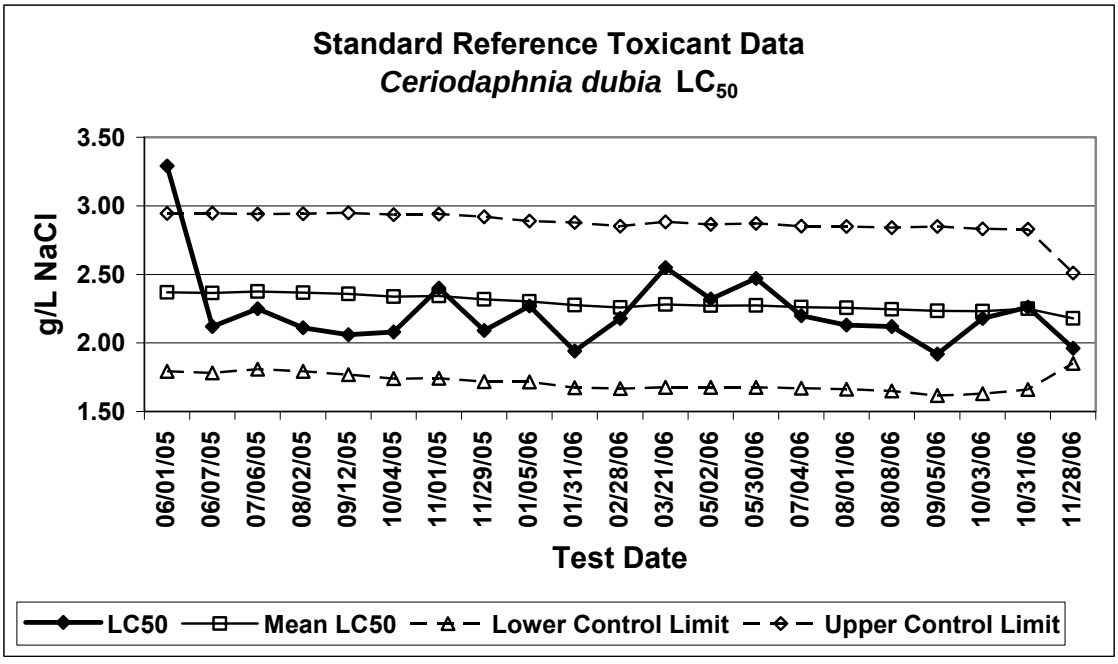
Florida Department of Environmental Protection
Bureau of Laboratories

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
05/24/05	1.94	2.32	0.19	1.94	2.70
06/01/05	3.29	2.37	0.29	1.79	2.94
06/07/05	2.12	2.36	0.29	1.78	2.95
07/06/05	2.25	2.37	0.28	1.81	2.94
08/02/05	2.11	2.37	0.29	1.79	2.94
09/12/05	2.06	2.36	0.29	1.77	2.95
10/04/05	2.08	2.34	0.30	1.74	2.94
11/01/05	2.40	2.34	0.30	1.74	2.94
11/29/05	2.09	2.32	0.30	1.72	2.92
01/05/06	2.27	2.30	0.29	1.72	2.89
01/31/06	1.94	2.28	0.30	1.67	2.88
02/28/06	2.18	2.26	0.30	1.67	2.85
03/21/06	2.55	2.28	0.30	1.68	2.88
05/02/06	2.32	2.27	0.30	1.68	2.87
05/30/06	2.47	2.27	0.30	1.68	2.87
07/04/06	2.20	2.26	0.30	1.67	2.85
08/01/06	2.13	2.26	0.30	1.66	2.85
08/08/06	2.12	2.24	0.30	1.65	2.84
09/05/06	1.92	2.23	0.31	1.62	2.85
10/03/06	2.18	2.23	0.30	1.63	2.83
10/31/06	2.26	2.25	0.29	1.66	2.83
11/28/06	1.96	2.18	0.17	1.85	2.51

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

CV = 7.80
EPA reference 75th quartile CV = 29%



Appendix C. (continued)

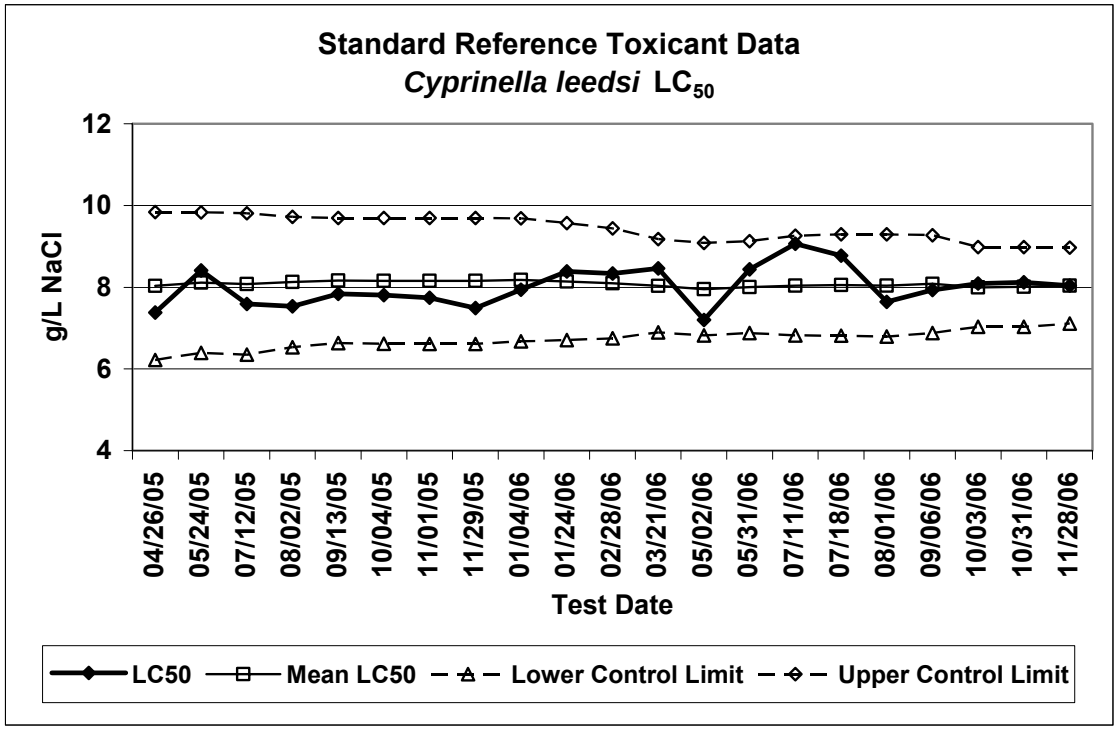
Florida Department of Environmental Protection
Bureau of Laboratories

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
03/29/05	8.04	7.99	0.96	6.07	9.91
04/26/05	7.38	8.03	0.90	6.22	9.84
05/24/05	8.41	8.11	0.86	6.40	9.83
07/12/05	7.59	8.08	0.86	6.35	9.81
08/02/05	7.53	8.13	0.80	6.53	9.72
09/13/05	7.84	8.16	0.77	6.63	9.70
10/04/05	7.81	8.16	0.77	6.62	9.69
11/01/05	7.74	8.15	0.77	6.61	9.69
11/29/05	7.49	8.15	0.77	6.61	9.69
01/04/06	7.94	8.18	0.75	6.67	9.68
01/24/06	8.39	8.14	0.72	6.71	9.57
02/28/06	8.34	8.09	0.67	6.75	9.44
03/21/06	8.46	8.04	0.57	6.89	9.18
05/02/06	7.2	7.95	0.57	6.82	9.09
05/31/06	8.44	8.00	0.56	6.88	9.13
07/11/06	9.06	8.04	0.61	6.82	9.26
07/18/06	8.77	8.05	0.62	6.81	9.29
08/01/06	7.64	8.04	0.63	6.79	9.29
09/06/06	7.93	8.08	0.60	6.88	9.27
10/03/06	8.09	8.00	0.49	7.03	8.98
10/31/06	8.12	8.01	0.49	7.03	8.98
11/28/06	8.04	8.04	0.46	7.11	8.97

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

CV = 5.72
EPA reference 75th quartile CV = 19%



Appendix C. (continued)

FDEP Biology Section - Acute SRT Bench Sheet

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

Method from EPA-821-R-02-012
Test Type: Definitive
Static / Static Renewal
Test Page 1 of 2

Diluent/ Batch#: DMW / 131-06
Toxicant/ Batch# NaCl / 115-06

Test Beginning: Date: 11/29/06 Time: 13:45
Test Ending: Date: 12-7-06 Time: 1005

Water Quality Parameters:	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	40.03	Hach	PDV
Alkalinity (mg/L as $CaCO_3$):	85	Hach	CD
Hardness (mg/L as CaCO3):	88	Hach	CD
Total Ammonia (mg/L as N):	<0.017	Denver	MF
Salinity (ppth):	< 1	Mettler	BA

Organism Batch #/ Age: 49-06 24 hrs
Feeding: Prior to test / Prior to renewal / Daily
Food: YCT P.*subcapitata* Artemia
Food Batch: 2-06 5-06 —
Chamber size: 30 mL
Test volume: 20 mL per replicate

Conc. µg/L (Cu)	Rep.	Chamber#	Number Live 0 hr	24 hr	48 hr	pH (SU) 0 hr	24 hr	48 hr	Temperature (° C) 0 hr	24 hr	48 hr	D.O. (mg/l) 0 hr	24 hr	48 hr	UNCORRECTED Cond. (mmhos/cm) Cond. (µmhom/cm) 0 hr	24 hr	48 hr
~~48 hr~~			~~48 hr~~	~~72 hr~~	~~96 hr~~	~~48 hr~~	~~72 hr~~	~~96 hr~~	~~48 hr~~	~~72 hr~~	~~96 hr~~	~~48 hr~~	~~72 hr~~	~~96 hr~~	~~48 hr~~	~~72 hr~~	~~96 hr~~
Control	A	A	5	5	5	8.1		7.4	24.0		24.3	7.2		5.4	0.180		0.200
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	5												
1.5	A	A	5	5 5	5	8.1		7.3	24.0		24.0	7.4		5.7	2.89		3.08
	B	B	5	5 5	5												
	C	C	5	5 5	5												
	D	D	5	3 5	5												
2.0	A	A	5	5 5	3	8.1		7.4	24.0		24.0	7.4		5.7	3.91		4.22
	B	B	5	3 5	3												
	C	C	5	2 5	2												
	D	D	5	4 3	0												
2.5	A	A	5	4 5	0	8.1		7.5	24.0		24.0	7.3		6.3	4.83		5.50
	B	B	5	3 3	0												
	C	C	5	2 3	0												
	D	D	5	4 3	0												
3.0	A	A	5	1 3	0	8.1		7.5	24.0		24.0	7.3		6.3	5.58		6.51
	B	B	5	3	0												
	C	C	5	3	0												
	D	D	5	3	0												
4.0	A	A	5	0	-	8.1		7.5	~~24.0~~ 24.0		23.7	7.7		5.2	7.47		8.80
	B	B	5	0	-												
	C	C	5	0	-												
	D	D	5	1	-												
	A																
	B																
	C																
	D																
Loaded / measured by:			BA	BA	BA	BA		BA	BA		BA	BA		BA	BA		BA
Recorded by:			BA	BA	BA	BA		PDV	BA		PDV	BA		PDV	BA		PDV

Investigators' Signatures
Anna Darish
Brian Hanson
Marshall Faircloth
Daisy Vichaikul
Erin Wilcox
REVIEWER

Concentrations prepared by: BA
Loading verified by: PDV
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min. 24.0 max. 26.2 mean 25.1
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min. 23.2 max. 24.4 mean 24.1

Remarks: (A) transcription error BA 11-29-06
(B) concentration error MF for BA 12-2-06

Statistical Results: Method: Spearman-Karber
(48) 96 hour LC50: 1.96
95% Confidence Interval: lower 1.84 upper 2.09

Revised 02/21/06

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Appendix C. (continued)

FDEP Biology Section - Acute SRT Bench Sheet

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

Method from EPA-821-R-02-012
Test Type: Definitive
Static / Static Renewal
Test Page 2 of 2

Diluent/ Batch#: DMW 1.31-06
Toxicant/ Batch# NaCl 1.15-06

Test Beginning: Date: 11.28.06 Time: 13:45
Test Ending: Date: 12-2-06 Time: 1005

Water Quality Parameters:	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.02	Hach	DPV
Alkalinity (mg/L as $CaCO_3$):	85	Hach	CD
Hardness (mg/L as CaCO3):	88	Hach	CD
Total Ammonia (mg/L as N):	<0.07	Denver	MF
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 4906 1 < 24 hrs
Feeding: Prior to test / Prior to renewal / Daily
Food: YCT P.*subcapitata* Artemia
Food Batch: 2-06 5-06 —
Chamber size: 30 mL
Test volume: 20 mL per replicate

Conc. µg/L (AL)	Rep.	Chamber#	Number Live			pH (SU)			Temperature (° C)			D.O. (mg/l)			UNCORRECTED Cond. (mmhos/cm) Cond. (µmhom/cm)		
			~~0 hr~~ 48 hr	24 hr 72 hr	48 hr 96 hr	~~0 hr~~ 48 hr	24 hr 72 hr	48 hr 96 hr	~~0 hr~~ 48 hr	24 hr 72 hr	48 hr 96 hr	~~0 hr~~ 48 hr	24 hr 72 hr	48 hr 96 hr	~~0 hr~~ 48 hr	24 hr 72 hr	48 hr 96 hr
Control	A	A	5	5	5	7.7		7.9	24.7		24.1	7.6		7.8	0.258		0.195
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	5												
1.5	A	A	5	5	5	7.9		7.8	24.6		24.1	7.6		7.5	2.98		3.25
	B	B	5	4 1D	3 1D												
	C	C	5	4 1D	4												
	D	D	5	5	5												
2.0	A	A	3 2D	3	3	8.0		7.9	24.7		24.0	7.6		7.5	3.57		4.27
	B	B	3 2D	3	3												
	C	C	1 3D	2 1D (B)	2												
	D	D	0 3D	0	0												
2.5	A	A	0			8.1			24.1			7.6			4.92		
	B	B	0														
	C	C	0														
	D	D	0														
3.0	A	A	0			8.1			25.4			7.6			5.74		
	B	B	0														
	C	C	2	0 2D			(B)			(B)			(B)			(B)	
	D	D	0														
4.0	A	A	—			—			—			—			—		
	B	B	—														
	C	C	—														
	D	D	—														
	A																
	B																
	C																
	D																
Loaded / measured by:			BA	MF	MF	PPV		MF	PPV		MF	PPV		MF	PPV		MF
Recorded by:			CA	MF	MF	JD		MF	JD		MF	JD		MF	JD		MF

Investigators' Signatures
James Davis
Paula Alderson
Marshall Faircloth
Patsy McMichael
Erin Wilcox
REVIEWER

Concentrations prepared by: BA
Loading verified by: —
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min. 24.0 max. 26.2 mean 25.1
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min 23.2 max. 24.9 mean 24.1

Remarks: (A) count error 2 alive none dead Replicate C 2.0 mm th MF 12-1-06
(B) MF 12-1-06 error - failed to perform reading on Dead weight (100% mortality) vial D. MF

Statistical Results: Method: Spearman-Karber
48 / 96 hour LC50: 1.87
95% Confidence Interval: lower 1.72 upper 2.03

Revised 02/21/06

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Appendix C. (continued)

FDEP Biology Section - Acute SRT Bench Sheet

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

Method from EPA-821-R-02-012
Test Type: Definitive
Static / Static Renewal
Test Page 1 of 2

Diluent/ Batch#: Well H_2O / 11-27-06
Toxicant/ Batch# NaCl / 11-27-06 16-06

Test Beginning: Date: 11.28.06 Time: 12:45
Test Ending: Date: 12-3-06 Time: 1025

Water Quality Parameters:	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	DDV
Alkalinity (mg/L as $CaCO_3$):	154	Hach	CJ
Hardness (mg/L as CaCO3):	138	Hach	CJ
Total Ammonia (mg/L as N):	20.17	Denver	MF
Salinity (ppth):	25	Mettler	BA

Organism Batch #/ Age: 28-06 / 13 days
Feeding: Prior to test / Prior to renewal / Daily
Food: YCT P.*subcapitata* Artemia
Food Batch: – – 13-06, 15-06 GSL-E36-98
Chamber size: 1000 mL
Test volume: 500 mL per replicate

Conc. µg/L (Ni)	Rep.	Chamber#	Number Live 0 hr / 24 hr / 48 hr (~~48 hr~~ / ~~72 hr~~ / ~~96 hr~~)	pH (SU) 0 hr / 24 hr / 48 hr (~~48 hr~~ / ~~72 hr~~ / ~~96 hr~~)	Temperature (° C) 0 hr / 24 hr / 48 hr (~~48 hr~~ / ~~72 hr~~ / ~~96 hr~~)	D.O. (mg/l) 0 hr / 24 hr / 48 hr (~~48 hr~~ / ~~72 hr~~ / ~~96 hr~~)	UNCORRECTED Cond. (mmhos/cm) Cond. (µmhom/cm) 0 hr / 24 hr / 48 hr (~~48 hr~~ / ~~72 hr~~ / ~~96 hr~~)
Control	A	A1	10 / 10 / 10	8.0 / / 8.2	24.0 / / 24.5	7.2 / / 7.2	0.268 / / 0.298
	B	A2	10 / 10 / 10	/ 8.0 /	/ 24.0 /	/ 7.1 /	/ 0.299 /
	C						
	D						
6.0	A	A3	10 / 10 / 10	7.9 / / 8.1	24.0 / / 24.2	7.3 / / 7.0	10.6 / / 10.7
	B	A4	10 / 10 / 10	/ 8.0 /	/ 24.2 /	/ 7.3 /	/ 10.3 /
	C						
	D						
7.0	A	A5	10 / 9[1D] / 9	7.9 / / 8.1	24.0 / / 24.5	7.3 / / 6.8	12.4 / / 12.4
	B	A6	10 / 10 / 10	/ 8.0 /	/ 24.3 /	/ 6.1 /	/ 12.0 /
	C						
	D						
8.0	A	A7	10 / 5[1D] / 5	8.0 / / 8.1	24.0 / / 24.4	7.3 / / 6.9	14.1 / / 14.0
	B	A8	10 / 4[1D] / 4	/ 8.0 /	/ 24.1 /	/ 6.0 /	/ 13.9 /
	C						
	D						
9.0	A	A9	10 / 4[1D] / 4	8.0 / / 8.1	24.0 / / 24.5	7.3 / / 6.9	15.6 / / 15.5
	B	A10	10 / 0[1D] / –	/ 8.0 /	/ 24.2 /	/ 6.0 /	/ 15.3 /
	C						
	D						
10.0	A	A11	10 / 0[1D] / –	8.0 / / –	24.0 / / –	7.1 / / –	17.3 / / –
	B	A12	10 / 0[1D] / –	/ 7.9 /	/ 24.5 /	/ 6.0 /	/ 16.8 /
	C						
	D						
	A						
	B						
	C						
	D						
Loaded / measured by:			DD / DD / DD	BA / DDV / DDV	BA / DD / DDV	BA / DDV / DDV	BA / DDV / DDV
Recorded by:			BA / DD / DD	BA / DDV / DDV	BA / DD / DDV	BA / DDV / DDV	BA / DDV / DDV

Investigators' Signatures
Jenya Daniels
Brett Kluber
Marshall Faircloth
Ashley Richitelli
Erin Wilcox
REVIEWER

Concentrations prepared by: BA / DD
Loading verified by: DDV
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min. 24.0 max. 26.2 mean 25.1
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min. 23.2 max. 24.9 mean 24.1

Remarks:

Statistical Results: Method: Spearman-Karber
48 / 96 hour LC50: 8.04
95% Confidence Interval: lower 7.75 upper 8.34

Revised 02/21/06

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Appendix C. (continued)

FDEP Biology Section - Acute SRT Bench Sheet

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

Method from EPA-821-R-02-012
Test Type: Definitive
Static / Static Renewal
Test Page 2 of 2

Diluent/ Batch#: Well H2O 11-27-06
Toxicant/ Batch# NaCl 1-16-06

Test Beginning: Date: 11.28.06 Time: 12:45
Test Ending: Date: 12-3-06 Time: 1025

Water Quality Parameters:	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	PPV
Alkalinity (mg/L as $CaCO_3$):	152	Hach	ao
Hardness (mg/L as CaCO3):	138	Hach	ao
Total Ammonia (mg/L as N):	<0.017	Denver	MF
Salinity (ppth):	~21	Mettler	BA

Organism Batch #/ Age: 28-06 / 13-06
Feeding: Prior to test / Prior to renewal / Daily
Food: YCT P.subcapitata Artemia
Food Batch: — — 13-06, 15-06 CSL-536-90
Chamber size: 1000 mL
Test volume: 500 mL per replicate

Conc. µg/L (A)	Rep.	Chamber#	Number Live 0 hr / 24 hr / 48 hr			pH (SU) 0 hr / 24 hr / 48 hr			Temperature (°C) 0 hr / 24 hr / 48 hr			D.O. (mg/l) 0 hr / 24 hr / 48 hr			UNCORRECTED Cond. (mmhos/cm) / Cond. (µmhom/cm) 0 hr / 24 hr / 48 hr		
			48 hr	72 hr	96 hr	48 hr	72 hr	96 hr	48 hr	72 hr	96 hr	48 hr	72 hr	96 hr	48 hr	72 hr	96 hr
Control	A	A1	10	10	10	7.9		8.0	23.8		24.9	7.2		7.5	.281		0.288
	B	A2	10	10	10		7.7			24.5			10.1			0.273	
	C																
	D																
6.0	A	A3	10	10	10	8.0		8.0	24.1		25.1	7.0		6.4	18.7		11.0
	B	A4	10	10	10		7.8			24.2			5.8			10.8	
	C																
	D																
7.0	A	A5	9	9	9	8.0		8.0	24.1		25.0	7.0		6.3	12.4		12.5
	B	A6	10	10	10		7.8			24.7			5.6			12.8	
	C																
	D																
8.0	A	A7	5	5	5	8.0		8.0	24.2		24.6	7.0		5.8	13.6		13.5
	B	A8	4	4	4		7.8			24.4			5.8			13.5	13.5 PPV
	C																
	D																
9.0	A	A9	4	3(D)	3	8.0		8.0	24.2		24.7	6.9		5.8	15.6		15.6
	B	A10	—	—	—		7.8			24.8			5.9			15.5	
	C																
	D																
10.0	A	A11	—	—	—	—		—	—		—	—		—	—		—
	B	A12	—	—	—		—			—			—			—	
	C																
	D																
	A																
	B																
	C																
	D																
Loaded / measured by:			JD	JD	MF	PPV	BA	MF	PPV	BA	MF	PPV	BA	MF	PPV	BA	MF
Recorded by:			JD	JD	MF	JD	PPV	MF	JD	PPV	MF	JD	PPV	MF	JD	PPV	MF

Investigators' Signatures
James Daniels
Bruce Barkuloo
Marshall Faircloth
Daisy McBride
Erin Wilcox
REVIEWER

Concentrations prepared by: BA
Loading verified by: —
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min 23.7 (24.0) max 24.5 (26.2) mean 25.1
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min. 23.2 max. 24.9 mean 24.1

Remarks:
(A) Conc A 48hr temp = 24.3 J.D.

Statistical Results: Method: Spearman-Karber
48 / 96 hour LC50: 7.99
95% Confidence Interval: lower 7.7 upper 8.29

Revised 02/21/06

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Appendix C. (continued)

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

DATE: 11-28-06 DURATION: 48 h TOXICANT: NaCl
SPECIES: C. dubia

RAW DATA: Concentration (g/L)	Number Exposed	Mortalities
0.00	20	0
1.50	20	0
2.00	20	12
2.50	20	20
3.00	20	18
4.00	20	20

SPEARMAN-KARBER TRIM: 0.00%

SPEARMAN-KARBER ESTIMATES: LC50: **1.96**
95% LOWER CONFIDENCE: 1.84
95% UPPER CONFIDENCE: 2.09

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

DATE: 11-28-06 DURATION: 48 h TOXICANT: NaCl
SPECIES: C. leedsi

RAW DATA: Concentration (g/L)	Number Exposed	Mortalities
0.00	20	0
6.00	20	0
7.00	20	1
8.00	20	11
9.00	20	16
10.00	20	20

SPEARMAN-KARBER TRIM: 0.00%

SPEARMAN-KARBER ESTIMATES: LC50: **8.04**
95% LOWER CONFIDENCE: 7.75
95% UPPER CONFIDENCE: 8.34

Appendix D. Test Organism Receipts

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

NELAC Accredited

Organism Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Date: 11/27/06

Shipped to: F-DEP

P.O. No: _____

Species	Quantity	Age	Brood Number	Temperature	Salinity
Mysidopsis bahia	150+	4 Days	M5061123	25°C	~20‰
Menidia beryllina	150+	9 Days	SS061118	25°C	~20‰
Cyprinella leedsi	150+	12 Days	CL061115	25°C	
Pimephales promelas	150+	7 Days	FM061120-1530	25°C	

Packed by: Frank Gonzi

Shipped Via: FedEx

Notes: _____

Thank you for your order.

Appendix D. (continued)

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

NELAC Accredited

Organism Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Date: 12/11/06

Shipped to: FDEP

P.O. No: _____

Species	Quantity	Age	Brood Number	Temperature	Salinity
Mysidopsis bahia					
Menidia beryllina					
Cyprinella leedsi	100+	10 Days	CH061201	25C	
Pimephales promelas					

Packed by: Frank Gary

Shipped Via: FedEx

Notes: _____

Thank you for your order.

Appendix E. Chemical Analyses performed on the effluent from the USN NAS Jacksonville Wastewater Treatment Facility Outfall D-001, sampled on December 11, 2006.

Date Sampled	Field ID	Analysis Group	Component	Results	Units	Remark	MDL	PQL
12/11/2006 10:46	EFFLUENT	Bio-AGP/LimNut	Algal Growth Potential	316	mg DryWt/L		0.3	0.9
12/11/2006 10:46	EFFLUENT	Bio-AGP/LimNut	Algal Growth Potential-Salinity Adjusted	932	mg DryWt/L		3	3
12/11/2006 10:46	EFFLUENT	Bio-BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	3.4	mg/L	A	0.2	2
12/11/2006 10:46	EFFLUENT	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	0.85	ug/L	U	0.85	2.6
12/11/2006 10:46	EFFLUENT	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	1.5	ug/L	U	1.5	4.5
12/11/2006 10:46	EFFLUENT	Bio-Toxicology	Bioassay-Acute-Screen-FW-C.dubia, LC50	100	LC50	K		
12/11/2006 10:46	EFFLUENT	Bio-Toxicology	Bioassay-Acute-Screen-FW-Fish, LC50	100	LC50	K		
12/11/2006 10:46	EFFLUENT	Bio-Toxicology	Bioassay-Acute-Scrn-FW-Fish,LC50-dechlr	100	LC50	L		
12/11/2006 10:46	EFFLUENT	Bio-Toxicology	Bioassy-Acute-Scrn-FW-Cdubia,LC50-dechlr	100	LC50	L		
12/11/2006 10:46	EFFLUENT	BNA-Water	1,2,4-Trichlorobenzene	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	1,2-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	1,3-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	1,4-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	2,4,6-Trichlorophenol	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	2,4-Dichlorophenol	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	2,4-Dimethylphenol	48	ug/L	U	48	190
12/11/2006 10:46	EFFLUENT	BNA-Water	2,4-Dinitrophenol	14	ug/L	U	14	57
12/11/2006 10:46	EFFLUENT	BNA-Water	2,4-Dinitrotoluene	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	2,6-Dinitrotoluene	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	2-Chloronaphthalene	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	2-Chlorophenol	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	2-Methyl-4,6-dinitrophenol	2.9	ug/L	U	2.9	11
12/11/2006 10:46	EFFLUENT	BNA-Water	2-Nitrophenol	0.95	ug/L	UJ	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	3,3'-Dichlorobenzidine	38	ug/L	UJ	38	150
12/11/2006 10:46	EFFLUENT	BNA-Water	4,4'-DDD	1.4	ug/L	U	1.4	5.7
12/11/2006 10:46	EFFLUENT	BNA-Water	4,4'-DDE	1.4	ug/L	UJ	1.4	5.7
12/11/2006 10:46	EFFLUENT	BNA-Water	4,4'-DDT	1.4	ug/L	UJ	1.4	5.7
12/11/2006 10:46	EFFLUENT	BNA-Water	4-Bromophenyl phenyl ether	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	4-Chloro-3-methylphenol	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	4-Chlorophenyl phenyl ether	1.9	ug/L	U	1.9	7.6
12/11/2006 10:46	EFFLUENT	BNA-Water	4-Nitrophenol	14	ug/L	U	14	57
12/11/2006 10:46	EFFLUENT	BNA-Water	Acenaphthene	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	Acenaphthylene	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	Aldrin	1.4	ug/L	UJ	1.4	5.7
12/11/2006 10:46	EFFLUENT	BNA-Water	Anthracene	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	Benzidine	95	ug/L	U	95	380
12/11/2006 10:46	EFFLUENT	BNA-Water	Benzo(a)anthracene	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	Benzo(a)pyrene	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	Benzo(b)fluoranthene	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	Benzo(g,h,i)perylene	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	Benzo(k)fluoranthene	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	Bis(2-chloroethoxy)methane	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	Bis(2-chloroethyl)ether	0.95	ug/L	U	0.95	3.8

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Component	Results	Units	Remark	MDL	PQL
12/11/2006 10:46	EFFLUENT	BNA-Water	Bis(2-chloroisopropyl)ether	2.9	ug/L	U	2.9	11
12/11/2006 10:46	EFFLUENT	BNA-Water	Bis(2-ethylhexyl)phthalate	14	ug/L	U	14	57
12/11/2006 10:46	EFFLUENT	BNA-Water	Butyl benzyl phthalate	4.8	ug/L	U	4.8	19
12/11/2006 10:46	EFFLUENT	BNA-Water	Chrysene	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	Di-n-butyl phthalate	4.8	ug/L	U	4.8	19
12/11/2006 10:46	EFFLUENT	BNA-Water	Di-n-octyl phthalate	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	Dibenzo(a,h)anthracene	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	Dieldrin	1.4	ug/L	U	1.4	5.7
12/11/2006 10:46	EFFLUENT	BNA-Water	Diethyl phthalate	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	Dimethyl phthalate	48	ug/L	U	48	190
12/11/2006 10:46	EFFLUENT	BNA-Water	Endosulfan I	3.8	ug/L	U	3.8	15
12/11/2006 10:46	EFFLUENT	BNA-Water	Endosulfan II	3.8	ug/L	U	3.8	15
12/11/2006 10:46	EFFLUENT	BNA-Water	Endosulfan sulfate	1.4	ug/L	U	1.4	5.7
12/11/2006 10:46	EFFLUENT	BNA-Water	Endrin	1.4	ug/L	UJ	1.4	5.7
12/11/2006 10:46	EFFLUENT	BNA-Water	Endrin aldehyde	3.8	ug/L	UJ	3.8	15
12/11/2006 10:46	EFFLUENT	BNA-Water	Fluoranthene	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	Fluorene	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	Heptachlor	1.4	ug/L	U	1.4	5.7
12/11/2006 10:46	EFFLUENT	BNA-Water	Heptachlor epoxide	1.4	ug/L	UJ	1.4	5.7
12/11/2006 10:46	EFFLUENT	BNA-Water	Hexachlorobenzene	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	Hexachlorobutadiene	2.9	ug/L	U	2.9	11
12/11/2006 10:46	EFFLUENT	BNA-Water	Hexachlorocyclopentadiene	2.9	ug/L	U	2.9	11
12/11/2006 10:46	EFFLUENT	BNA-Water	Hexachloroethane	2.9	ug/L	U	2.9	11
12/11/2006 10:46	EFFLUENT	BNA-Water	Indeno(1,2,3-cd)pyrene	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	Isophorone	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	N-Nitrosodi-n-propylamine	1.9	ug/L	U	1.9	7.6
12/11/2006 10:46	EFFLUENT	BNA-Water	N-Nitrosodimethylamine	1.9	ug/L	U	1.9	7.6
12/11/2006 10:46	EFFLUENT	BNA-Water	N-Nitrosodiphenylamine/ Diphenylamine	2.9	ug/mL	UJ	2.9	11
12/11/2006 10:46	EFFLUENT	BNA-Water	Naphthalene	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	Nitrobenzene	1.9	ug/L	U	1.9	7.6
12/11/2006 10:46	EFFLUENT	BNA-Water	Pentachlorophenol	2.9	ug/L	U	2.9	11
12/11/2006 10:46	EFFLUENT	BNA-Water	Phenanthrene	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	Phenol	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	Pyrene	0.95	ug/L	U	0.95	3.8
12/11/2006 10:46	EFFLUENT	BNA-Water	alpha-BHC	1.4	ug/L	U	1.4	5.7
12/11/2006 10:46	EFFLUENT	BNA-Water	beta-BHC	1.4	ug/L	U	1.4	5.7
12/11/2006 10:46	EFFLUENT	BNA-Water	delta-BHC	1.4	ug/L	UJ	1.4	5.7
12/11/2006 10:46	EFFLUENT	BNA-Water	gamma-BHC	1.4	ug/L	UJ	1.4	5.7
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	1,2,4-Trichlorobenzene	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	1,2-Dichlorobenzene	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	1,3-Dichlorobenzene	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	1,4-Dichlorobenzene	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	2,4,6-Trichlorophenol	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	2,4-Dichlorophenol	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	2,4-Dimethylphenol	49	ug/L	U	49	190

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Component	Results	Units	Remark	MDL	PQL
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	2,4-Dinitrophenol	15	ug/L	U	15	58
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	2,4-Dinitrotoluene	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	2,6-Dinitrotoluene	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	2-Chloronaphthalene	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	2-Chlorophenol	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	2-Methyl-4,6-dinitrophenol	2.9	ug/L	U	2.9	12
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	2-Nitrophenol	0.97	ug/L	UJ	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	3,3'-Dichlorobenzidine	39	ug/L	UJ	39	160
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	4,4'-DDD	1.5	ug/L	U	1.5	5.8
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	4,4'-DDE	1.5	ug/L	UJ	1.5	5.8
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	4,4'-DDT	1.5	ug/L	UJ	1.5	5.8
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	4-Bromophenyl phenyl ether	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	4-Chloro-3-methylphenol	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	4-Chlorophenyl phenyl ether	1.9	ug/L	U	1.9	7.8
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	4-Nitrophenol	15	ug/L	U	15	58
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Acenaphthene	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Acenaphthylene	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Aldrin	1.5	ug/L	UJ	1.5	5.8
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Anthracene	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Benzidine	97	ug/L	U	97	390
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Benzo(a)anthracene	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Benzo(a)pyrene	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Benzo(b)fluoranthene	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Benzo(g,h,i)perylene	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Benzo(k)fluoranthene	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Bis(2-chloroethoxy)methane	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Bis(2-chloroethyl)ether	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Bis(2-chloroisopropyl)ether	2.9	ug/L	U	2.9	12
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Bis(2-ethylhexyl)phthalate	15	ug/L	U	15	58
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Butyl benzyl phthalate	4.9	ug/L	U	4.9	19
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Chrysene	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Di-n-butyl phthalate	4.9	ug/L	U	4.9	19
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Di-n-octyl phthalate	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Dibenzo(a,h)anthracene	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Dieldrin	1.5	ug/L	U	1.5	5.8
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Diethyl phthalate	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Dimethyl phthalate	49	ug/L	U	49	190
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Endosulfan I	3.9	ug/L	U	3.9	16
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Endosulfan II	3.9	ug/L	U	3.9	16
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Endosulfan sulfate	1.5	ug/L	U	1.5	5.8
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Endrin	1.5	ug/L	UJ	1.5	5.8
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Endrin aldehyde	3.9	ug/L	UJ	3.9	16
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Fluoranthene	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Fluorene	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Heptachlor	1.5	ug/L	U	1.5	5.8

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Component	Results	Units	Remark	MDL	PQL
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Heptachlor epoxide	1.5	ug/L	UJ	1.5	5.8
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Hexachlorobenzene	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Hexachlorobutadiene	2.9	ug/L	U	2.9	12
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Hexachlorocyclopentadiene	2.9	ug/L	U	2.9	12
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Hexachloroethane	2.9	ug/L	U	2.9	12
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Indeno(1,2,3-cd)pyrene	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Isophorone	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	N-Nitrosodi-n-propylamine	1.9	ug/L	U	1.9	7.8
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	N-Nitrosodimethylamine	1.9	ug/L	U	1.9	7.8
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	N-Nitrosodiphenylamine/ Diphenylamine	2.9	ug/mL	UJ	2.9	12
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Naphthalene	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Nitrobenzene	1.9	ug/L	U	1.9	7.8
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Pentachlorophenol	2.9	ug/L	U	2.9	12
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Phenanthrene	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Phenol	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	Pyrene	0.97	ug/L	U	0.97	3.9
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	alpha-BHC	1.5	ug/L	U	1.5	5.8
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	beta-BHC	1.5	ug/L	U	1.5	5.8
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	delta-BHC	1.5	ug/L	UJ	1.5	5.8
12/11/2006 11:27	EQUIPMENT BLANK	BNA-Water	gamma-BHC	1.5	ug/L	UJ	1.5	5.8
12/11/2006 10:46	EFFLUENT	GC-Water	Alachlor	0.6	ug/L	U	0.6	2.4
12/11/2006 10:46	EFFLUENT	GC-Water	Ametryn	0.05	ug/L	U	0.05	0.2
12/11/2006 10:46	EFFLUENT	GC-Water	Atrazine	0.05	ug/L	U	0.05	0.2
12/11/2006 10:46	EFFLUENT	GC-Water	Azinphos Methyl	0.2	ug/L	UJ	0.2	0.8
12/11/2006 10:46	EFFLUENT	GC-Water	Bromacil	0.2	ug/L	U	0.2	0.8
12/11/2006 10:46	EFFLUENT	GC-Water	Butylate	0.2	ug/L	UJ	0.2	0.8
12/11/2006 10:46	EFFLUENT	GC-Water	Chlorpyrifos Ethyl	0.05	ug/L	U	0.05	0.2
12/11/2006 10:46	EFFLUENT	GC-Water	Chlorpyrifos Methyl	0.1	ug/L	U	0.1	0.4
12/11/2006 10:46	EFFLUENT	GC-Water	Diazinon	0.05	ug/L	UJ	0.05	0.2
12/11/2006 10:46	EFFLUENT	GC-Water	Ethion	0.05	ug/L	U	0.05	0.2
12/11/2006 10:46	EFFLUENT	GC-Water	Ethoprop	0.1	ug/L	U	0.1	0.4
12/11/2006 10:46	EFFLUENT	GC-Water	Fenamiphos	0.2	ug/L	U	0.2	0.8
12/11/2006 10:46	EFFLUENT	GC-Water	Fonofos	0.1	ug/L	U	0.1	0.4
12/11/2006 10:46	EFFLUENT	GC-Water	Hexazinone	0.1	ug/L	U	0.1	0.4
12/11/2006 10:46	EFFLUENT	GC-Water	Malathion	0.15	ug/L	U	0.15	0.6
12/11/2006 10:46	EFFLUENT	GC-Water	Metalaxyl	0.25	ug/L	U	0.25	1
12/11/2006 10:46	EFFLUENT	GC-Water	Metolachlor	0.5	ug/L	U	0.5	2
12/11/2006 10:46	EFFLUENT	GC-Water	Metribuzin	0.1	ug/L	U	0.1	0.4
12/11/2006 10:46	EFFLUENT	GC-Water	Mevinphos	0.2	ug/L	U	0.2	0.8
12/11/2006 10:46	EFFLUENT	GC-Water	Naled	0.8	ug/L	U	0.8	3.2
12/11/2006 10:46	EFFLUENT	GC-Water	Norflurazon	0.15	ug/L	U	0.15	0.6
12/11/2006 10:46	EFFLUENT	GC-Water	Parathion Ethyl	0.15	ug/L	U	0.15	0.6
12/11/2006 10:46	EFFLUENT	GC-Water	Parathion Methyl	0.1	ug/L	U	0.1	0.4
12/11/2006 10:46	EFFLUENT	GC-Water	Phorate	0.05	ug/L	U	0.05	0.2
12/11/2006 10:46	EFFLUENT	GC-Water	Prometryn	0.15	ug/L	U	0.15	0.6

Appendix E. (continued)

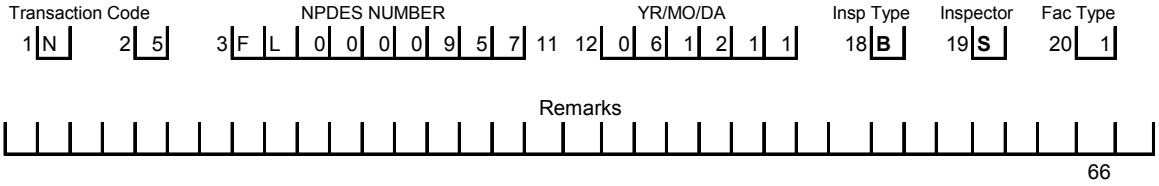
Date Sampled	Field ID	Analysis Group	Component	Results	Units	Remark	MDL	PQL
12/11/2006 10:46	EFFLUENT	GC-Water	Simazine	0.05	ug/L	U	0.05	0.2
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Alachlor	0.6	ug/L	U	0.6	2.4
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Ametryn	0.05	ug/L	U	0.05	0.2
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Atrazine	0.05	ug/L	U	0.05	0.2
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Azinphos Methyl	0.2	ug/L	UJ	0.2	0.8
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Bromacil	0.2	ug/L	U	0.2	0.8
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Butylate	0.2	ug/L	UJ	0.2	0.8
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Chlorpyrifos Ethyl	0.05	ug/L	U	0.05	0.2
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Chlorpyrifos Methyl	0.1	ug/L	U	0.1	0.4
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Diazinon	0.05	ug/L	UJ	0.05	0.2
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Ethion	0.05	ug/L	U	0.05	0.2
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Ethoprop	0.1	ug/L	U	0.1	0.4
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Fenamiphos	0.2	ug/L	U	0.2	0.8
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Fonofos	0.1	ug/L	U	0.1	0.4
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Hexazinone	0.1	ug/L	U	0.1	0.4
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Malathion	0.15	ug/L	U	0.15	0.6
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Metalaxyl	0.25	ug/L	U	0.25	1
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Metolachlor	0.5	ug/L	U	0.5	2
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Metribuzin	0.1	ug/L	U	0.1	0.4
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Mevinphos	0.2	ug/L	U	0.2	0.8
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Naled	0.8	ug/L	U	0.8	3.2
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Norflurazon	0.15	ug/L	U	0.15	0.6
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Parathion Ethyl	0.15	ug/L	U	0.15	0.6
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Parathion Methyl	0.1	ug/L	U	0.1	0.4
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Phorate	0.05	ug/L	U	0.05	0.2
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Prometryn	0.15	ug/L	U	0.15	0.6
12/11/2006 11:27	EQUIPMENT BLANK	GC-Water	Simazine	0.05	ug/L	U	0.05	0.2
12/11/2006 10:46	EFFLUENT	Metals-Water	Aluminum	14	ug/L	I	4	16
12/11/2006 10:46	EFFLUENT	Metals-Water	Arsenic	0.9	ug/L	I	0.5	2
12/11/2006 10:46	EFFLUENT	Metals-Water	Cadmium	0.4	ug/L		0.05	0.2
12/11/2006 10:46	EFFLUENT	Metals-Water	Calcium	48.8	mg/L		0.02	0.08
12/11/2006 10:46	EFFLUENT	Metals-Water	Chromium	1.28	ug/L		0.3	1.2
12/11/2006 10:46	EFFLUENT	Metals-Water	Copper	3.61	ug/L		0.2	0.8
12/11/2006 10:46	EFFLUENT	Metals-Water	Iron	73	ug/L		5	20
12/11/2006 10:46	EFFLUENT	Metals-Water	Lead	0.2	ug/L	U	0.2	0.8
12/11/2006 10:46	EFFLUENT	Metals-Water	Magnesium	18.7	mg/L		0.005	0.02
12/11/2006 10:46	EFFLUENT	Metals-Water	Nickel	3.3	ug/L	I	1	4
12/11/2006 10:46	EFFLUENT	Metals-Water	Selenium	0.5	ug/L	U	0.5	2
12/11/2006 10:46	EFFLUENT	Metals-Water	Silver	0.025	ug/L	U	0.025	0.1
12/11/2006 10:46	EFFLUENT	Metals-Water	Zinc	24	ug/L		3	12
12/11/2006 11:27	EQUIPMENT BLANK	Metals-Water	Aluminum	4	ug/L	U	4	16
12/11/2006 11:27	EQUIPMENT BLANK	Metals-Water	Arsenic	0.5	ug/L	U	0.5	2
12/11/2006 11:27	EQUIPMENT BLANK	Metals-Water	Cadmium	0.05	ug/L	U	0.05	0.2
12/11/2006 11:27	EQUIPMENT BLANK	Metals-Water	Calcium	0.02	mg/L	U	0.02	0.08
12/11/2006 11:27	EQUIPMENT BLANK	Metals-Water	Chromium	0.3	ug/L	U	0.3	1.2

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Component	Results	Units	Remark	MDL	PQL
12/11/2006 11:27	EQUIPMENT BLANK	Metals-Water	Copper	0.2	ug/L	U	0.2	0.8
12/11/2006 11:27	EQUIPMENT BLANK	Metals-Water	Iron	5	ug/L	U	5	20
12/11/2006 11:27	EQUIPMENT BLANK	Metals-Water	Lead	0.2	ug/L	U	0.2	0.8
12/11/2006 11:27	EQUIPMENT BLANK	Metals-Water	Magnesium	0.005	mg/L	U	0.005	0.02
12/11/2006 11:27	EQUIPMENT BLANK	Metals-Water	Nickel	1	ug/L	U	1	4
12/11/2006 11:27	EQUIPMENT BLANK	Metals-Water	Selenium	0.5	ug/L	U	0.5	2
12/11/2006 11:27	EQUIPMENT BLANK	Metals-Water	Silver	0.025	ug/L	U	0.025	0.1
12/11/2006 11:27	EQUIPMENT BLANK	Metals-Water	Zinc	3	ug/L	U	3	12
12/11/2006 10:46	EFFLUENT	Nutrients-Liquid	Ammonia-N	0.017	mg N/L	I	0.01	0.02
12/11/2006 10:46	EFFLUENT	Nutrients-Liquid	Cyanide	0.005	mg CN/L	U	0.005	0.02
12/11/2006 10:46	EFFLUENT	Nutrients-Liquid	Kjeldahl Nitrogen	0.6	mg N/L	I	0.32	0.8
12/11/2006 10:46	EFFLUENT	Nutrients-Liquid	NO2NO3-N	19	mg N/L		0.4	1
12/11/2006 10:46	EFFLUENT	Nutrients-Liquid	O-Phosphate-P	2.5	mg P/L		0.2	0.5
12/11/2006 10:46	EFFLUENT	Nutrients-Liquid	TSS	4	mg/L	U	4	16
12/11/2006 10:46	EFFLUENT	Nutrients-Liquid	Total-P	2.9	mg P/L	A	0.2	0.6
12/11/2006 11:27	EQUIPMENT BLANK	Nutrients-Liquid	Ammonia-N	0.01	mg N/L	U	0.01	0.02
12/11/2006 11:27	EQUIPMENT BLANK	Nutrients-Liquid	Cyanide		mg CN/L			
12/11/2006 11:27	EQUIPMENT BLANK	Nutrients-Liquid	Kjeldahl Nitrogen	0.08	mg N/L	U	0.08	0.2
12/11/2006 11:27	EQUIPMENT BLANK	Nutrients-Liquid	NO2NO3-N	0.004	mg N/L	U	0.004	0.01
12/11/2006 11:27	EQUIPMENT BLANK	Nutrients-Liquid	O-Phosphate-P	0.004	mg P/L	U	0.004	0.01
12/11/2006 11:27	EQUIPMENT BLANK	Nutrients-Liquid	Total-P	0.02	mg P/L	U	0.02	0.06
12/11/2006 10:46	EFFLUENT	Overflow	Oil and Grease	2	mg/L	I		
12/11/2006 11:27	EQUIPMENT BLANK	Overflow	Oil and Grease	3.6	mg/L	I		

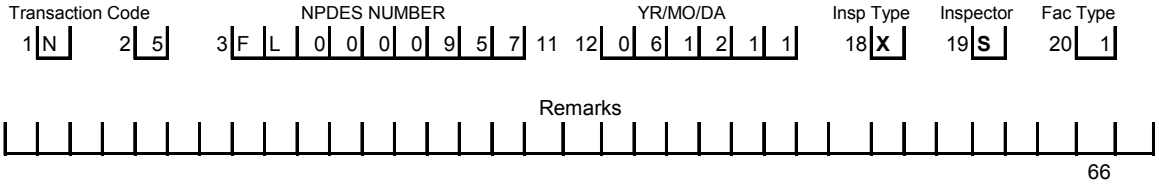
The Bioassay of USN NAS Jacksonville Wastewater Treatment Facility effluent sampled on December 11, 2006. NPDES #FL0000957.

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



The Priority Pollutants Analysis of USN NAS Jacksonville Wastewater Treatment Facility effluent sampled on December 11, 2006. NPDES #FL0000957.

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



Biological Analyses of USN NAS Jacksonville Wastewater Treatment Facility effluent sampled on December 11, 2006. NPDES #FL0000957.

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

