

Bioassays of

E.C.U.A. Main Street WWTP

Escambia County

NPDES #FL0021440

Sampled November 15, 17, and 19, 2004

April 2005

Biology Section
Bureau of Laboratories
Division of Resource Assessment and Management

Quality Manual No. 870346G
NELAC Certification No. E31780

Escambia County Utilities Authority (E.C.U.A.) Main Street Wastewater Treatment Plant (WWTP), 401 West Government Street, Pensacola, Escambia County, Florida, NPDES #FL0021440. Effluent samples for this facility were collected on November 15, 17, and 19, 2004.

Introduction

The E.C.U.A. Main Street WWTP has a design flow of 20.0 million gallons per day (MGD) and an average flow of 14.49 MGD (from November 2003 to October 2004). The wastewater treatment facility consists of mechanically cleaned bar screens, aerated grit chamber, alum addition for phosphorus removal, primary clarification, lime addition for pH adjustment, nitrification and biological denitrification, polymer addition, final clarification, chlorination with chlorine, dechlorination with sulfur dioxide, and residual incineration. Effluent is discharged to the Class III marine waters of Pensacola Bay at Discharge Location D-001, which is at the end of a pipe approximately 1,862.02 m (6,109 feet) in length and discharges at a depth of approximately 7.16 m (23.5 feet; facility information provided by Glenn Butts and Wesley Keller of FDEP Northwest District office).

This facility has had exceedences for BOD, fecal coliforms, iron, lead, mercury, total nitrogen, dissolved oxygen, pH, total phosphorus, total suspended solids (TSS), ultraviolet light dosage, zinc, acute toxicity, and chronic toxicity in the past four years. Acute toxicity violations, for both the fish (*Cyprinella leedsi*) and water flea (*Ceriodaphnia dubia*), occurred from 2001-2002, and chronic toxicity violations for *C. dubia* occurred in 2004.

Methods

Samples were collected from the D-001 NPDES sampling point by Glenn Butts (FDEP Northwest District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling. All DEP SOP's are available on the web at: http://www.floridadep.org/labs/qa/sops.htm.

The chronic screening toxicity tests and algal growth potential test were performed following internal DEP SOP's TA07_05, TA07_09, and TA08_01 through TA08_07. All internal DEP SOP's are available on the web at: http://www.floridadep.org/labs/cgi-bin/sop/biosop.asp.

Dunnett's procedure (available at Statistical Analysis for Biological Methods http://www.epa.gov/EERD/stat2.htm) and t-tests were used to analyze data from these tests.

Toxicity Test Results

Tests were performed November 16-23, 2004.

Ceriodaphnia dubia 7-day chronic screening bioassay – NOEC < 100%
LOEC for reproduction = 100%

Pimephales promelas 7-day chronic screening bioassay – NOEC < 100%
LOEC for growth = 100%

Bioassay test results showed a reduction in growth and reproduction for the fish and the water flea, respectively, in 100% effluent. The mean fish weights in the control and 100% effluent were 0.480 and 0.316 mg/organism, respectively. The mean numbers of neonate water fleas produced in the control and 100% effluent were 33.7 and 27.6 neonates/adult, respectively. Since the Lowest Observed Effect Concentration (LOEC) was the 100% effluent test concentration, it follows that the No Observed Effect Concentration (NOEC) must be less than 100% effluent.

See Appendix 1 for bioassay bench sheets.

Algal Growth Potential

The effluent Algal Growth Potential (AGP) was 24.5 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 11.4 (±20%) mg dry wt/L (Table 1; Miller et al. 1978). The difference in the measured and predicted growth suggests that the test species utilized organic nitrogen in addition to the noted inorganic nitrogen.

The salinity-adjusted effluent AGP was 4.08 mg dry wt/L of *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 difference between the freshwater and saltwater test results relative to the “problem” thresholds could be due to the fact that the water sample was autoclaved for the freshwater test, but not for the saltwater test. Autoclaving can release nutrients from organic matter in the water sample, which could account for greater algal growth in the freshwater test.

See Table 1 for AGP results.

Chemistry Results

Total residual chlorine was not detected in any of the three bioassay samples in the laboratory. The total ammonia concentrations in the bioassay samples were 0.416, 0.637, and 2.26 mg/L for samples received on test days 0, 2, and 4, respectively. The total ammonia concentration in the sample collected and preserved for chemical analysis (Day 0 sample collected on 11/15/04) was 0.14 mg/L. Based on the pH, salinity and temperature of the effluent as collected, the calculated unionized ammonia concentration of the effluent was < 0.02 mg/L.

Atrazine was detected in the effluent. Aluminum, copper, iron, lead, silver, and zinc were detected in the effluent at levels that comply with Class III marine water quality criteria. Nickel was detected between the laboratory minimum detection limit (MDL) and practical quantitation limit (PQL).

See Table 2 for results of analytes detected in the effluent, and corresponding limits.

See Appendix 2 for a complete list of chemical analyses performed.

Conclusion

The effluent samples collected from D-001 for this facility on November 15, 2004, showed chronic toxicity to both test species during the 7-day bioassays. The cause of the observed toxicity was not determined. Effluent water quality samples did not exceed any applicable water quality standards or violate any permit conditions, nor were identified constituents present in quantities known to produce the observed toxicity results. The effluent freshwater AGP result exceeded the "problem” threshold for fresh receiving waters; however, the marine AGP test result did not exceed the “problem” threshold for marine waters. This difference may be due to the release of nutrients by autoclaving in the freshwater test.

Literature Cited

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

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

Table 1. Measured and predicted algal growth potential (AGP; mg dry weight/L) for total soluble nitrogen (TSIN) and total nitrogen (TN) limitation of Pseudokirchneriella subcapitata *(measured), and measured AGP of* Dunaliella tertiolecta *(salinity-adjusted), for samples collected from the E.C.U.A. Main Street WWTP on November 15, 2004.*

Location	AGP (measured)	Predicted AGP (TSIN) ± 20%	Predicted AGP (TN) ± 20%	AGP (salinity-adjusted)	Inorganic N:P ratio	Total N:P ratio
Effluent Samples	24.5	11.4 ± 2.28	101.1 ± 20.2	4.08	5.66	4.51

Table 2. Effluent limits, Class III Marine Criteria and chemical data for samples collected from the E.C.U.A. Main Street WWTP on November 15, 2004.

E.C.U.A. Main Street WWTP	Class III Marine Stds	Effluent Limits	Effluent Samples	Effluent Renewal Day 2	Effluent Renewal Day 4
Organic Constituents (µg/L)					
Atrazine	-	-	0.49	-	-
Metals (µg/L unless otherwise noted)					
Aluminum	≤ 1500	-	367	-	-
Arsenic	≤ 50	-	6 U	-	-
Cadmium	≤ 9.3	-	0.075 U	-	-
Calcium (mg/L)	-	-	112	-	-
Chromium-III	-	-	2 U	-	-
Copper	≤ 3.7	≤ 30	3.6	-	-
Iron	≤ 300	≤ 300	176	-	-
Lead	≤ 8.5	≤ 5.6	0.98	-	-
Magnesium (mg/L)	-	-	14	-	-
Mercury	≤ 0.025	≤ 0.025 s	0.12 U	-	-
Nickel	≤ 8.3	≤ 15	4.7 I	-	-
Selenium	≤ 71	-	1.1 U	-	-
Silver	≤ 2.3	≤ 2.3	0.25	-	-
Zinc	≤ 86	≤ 86	20	-	-
Nutrients (mg/L)					
Ortho-phosphate	-	-	0.053 Q	-	-
Total Phosphorus	-	≤ 1.0 a, 2.0 s	0.59	-	-
Ammonia	-	Report	0.14	-	-
Unionized Ammonia	-	Report	< 0.02 c	-	-
Nitrate+Nitrite	-	-	0.16	-	-
Total Kjeldahl Nitrogen	-	-	2.5	-	-
Organic Nitrogen	-	-	2.36 c	-	-
Total Nitrogen	-	≤ 7.0 a, Report s	2.66 c	-	-
General Physical and Chemical Parameters					
Dissolved Oxygen (mg/L)	≥ 4 s	≥ 4 s	7.7	7.85	7.4
pH (S.U.)	6.5 - 8.5	6.0 - 8.5	7.72	6.53	6.45
Conductivity (umhos/cm)	-	-	905.1	949.3	911.8
Temperature (C)	-	-	26.09	26.11	26.17
BOD (mg/L)	-	-	3.4 Q	-	-
CBOD (mg/L)		≤ 16.0 s	-	-	-
Hardness (mg/L)	-	-	337.3 c	-	-
AGP (mg DryWt/L)	-	-	24.5	-	-
AGP-Salinity Adjusted (mg DryWt/L)	-	-	4.08	-	-
TSS (mg/L)	-	≤ 9.9 a, Report s	18	-	-
Turbidity (NTU)	29 t	-	1.1 Q	-	-

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

a - Annual average

c - calculated value

s - Single sample

t - Shall not exceed 29 NTUs above background

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

Q - Sample held beyond normal holding time

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

Appendix 1. Bench Sheets

Chronic Screening Bioassay Benchsheet

Sample Identification, Test Conditions and Physical Chemistry

State of Florida
Department of Environmental Protection
Biology Laboratory Chronic Screening Bioassay
Ceriodaphnia dubia Bench Sheet

Sample Source: Pensacola Main Street AlWwTP
Address: 401 W. Government St.
County: Escambia
NPDES Permit #FL 0021440
Contact/District Glenn Butts / NW
Start Date 11/16/04 Time 1330 End Date: 11/23/04 Time 1245
LIMS entry: 12/3/04 MF verified: 12/3/04 SP
Incubator # 3 Temperature Range: 25.1 - 25.7°C
Room B246 Temperature Range: 24.0°C - 24.3°C

SOP#: TA07_05
Light Intensity : 50 - 100 ft. candles (yes) no
Photoperiod : 16 light 8 dark (yes) no
Chamber size : 30 ml Organism Batch #: 42
Sample volume : 20 ml Organism age : <24 hours

Feeding: Daily YCT Batch#: 5 0.1 ml
P. subcapitata Batch #: 41 0.1 ml

Organism: *Ceriodaphnia dubia*

Water Quality Parameters

	Field Chlorine mg/L			Lab Chlorine mg/L			Alkalinity mg/L as $CaCO_3$			Hardness mg/L as $CaCO_3$		
Lab Sample #:	1	2	3	1	2	3	1	2	3	1	2	3
Sample:	Not measured	Not measured	Not measured	<0.03	0.04	0.03	311	373	350	138	173	325
Diluent/Control:				<0.03	<0.03	<0.03	84	84	101	101	101	102
Method:	—	—	—	Hach	Hach	Hach	Hach	Hach	Hach	Hach	Hach	Hach
Measured by:	—	—	—	JD/SP	DN	DN	SD	SD	SD/DN	JD	JD	JD/DN
Verified by:	MF	MF	DN	MF	MF	MF	DN	DN	MF	DN	DN	MF/DN

	Conductivity (circle one) (µmhos-cm) mmhos-cm			Ammonia mg/L			Salinity ‰		
Lab Sample#:	1	2	3	1	2	3	1	2	3
Sample:	932	1030	972	0.416	0.637	2.26	<1	<1	<1
Diluent/Control:	230	185	180	<0.017	<0.017	<0.017	<1	<1	<1
Method:	Mettler	Mettler	Mettler	Denver	Denver	Denver	Mettler	Mettler	Mettler
Measured by:	SD	SD/DN	SD/DN	MF	MF	DN	DN	DN	DN
Verified by:	MF	MF	MF	DN	DN	MF	MF/DN	MF	MF

conv. = conversion based on conductivity and temperature

Sample Received	LAB ID #	LIMS SAMPLE #	LIMS JOB #
Test Day 0	Sample: 1	796991	TLH - 2004-11-17-48
Test Day 2	Sample: 2	797813	TLH - 2004-11-18-84
Test Day 4	Sample: 3	798664	TLH - 2004-11-23-14

Lab Sample #	Collection Date/Time	Received Date/Time
1	11/14/04 / 0800	11/16/04 / 1110
2	11/17/04 / 0940	11/18/04 / 1100
3	11/19/04 / 0800	11/20/04 / 1200

Diluent / Control Batch #:	Days Used
20% DMW / 41	5
20% DMW / 42	2

Investigators' signatures
Dawn Nicholson
Marshall Faircloth
Nicole Wellendorf
Sarah Pinchuk
James Daniels

reviewer Nicole Wellendorf

Comments: Lowest Observed Effect Concentration for Reproduction is 100% sample
mean reproduction in controls = 33.7 neonates/adult
mean reproduction in 100% ample = 27.6 neonates/adult
NOEC = <100%

revised 6/14/04 JF

Test Page 1

000015

Facility: Pinnacle MainStreet Annex

State of Florida
Department of Environmental Protection
Biology Laboratory Chronic Screening Bioassay
Ceriodaphnia dubia Bench Sheets - Reproduction
SOP TA07_05

Begin Test:
Date: 11/16/04 Time: 1300
End Test:
Date: 11/23/04 Time: 1245

LIMS Sample # 796991 for lab sample #1.

Conc.	Day	Replicate Number 1	2	3	4	5	6	7	8	9	10	total # young	# original organisms	young per adult
Control	0*												10	
	1												10	
	2												10	
	3	5	5	4	5	4	4	5	5	5	3	45	10	
	4	6	0	0	0	5	8	0	0	0	10	29	10	
	5	0	8	6	7	0	0	9	8	4	0	42	10	
	6	11	16	8	9	8	12	8	13	11	10	106	10	
	7	12	18	8	6	10	16	9	15	14	13	115	10	
	8		37									327	10	
	Total	34	37	26	21	27	40	31	41	34	36	327	10	337
100%	0*												10	
	1												10	
	2												10	
	3	5	5	5	0	0	5	5	5	5	5	46	10	
	4	8	5	6	4	3	4	0	10	10	9	59	10	
	5	0	3	0	7	1	0	6	0	0	0	17	10	
	6	8	7	12	4	4	5	6	5	5	6	62	10	
	7	13	9	11	7	10	8	10	11	11	8	98	10	
	8													
	Total	24	29	34	22	18	22	27	31	31	28	276	10	276

*Day 0 = equals test initiation day. X = Dead (original organism)

organisms loaded by: MF	
Day	****Counted by:**
0	NKW
1	MK
2	MF
3	MF
4	DN
5	DN
6	DN
7	DN
8	

**Initials-signatures on Chemistry page.

Comments:
Day 5 100% Mortality 1°1 MF 11-29-04
PMSD = 15.91%
CV = 2.2%

T-test Value 2.03271 18
T-Table Value 1.9432 df = 16
1.7341 mf 11/29/04 Transcription 11/30/04

reproduction	
LOEC =	100%
NOEC =	NA

Test acceptability
Mean control reproduction 15/female: (yes) no
Third Brood ≥8 in 60% of surviving females: (yes) no
Temperature range ≤3°: (yes) no
Control survival ≥80%: (yes) no

revised 7/14/04 JF

000016

Ceriodaphnia dubia Chronic Bioassay Parameters

SOP TA07_05

Sample Source: Pensacola Main Street AWWTP
LIMS Sample #: 746991 (for lab sample 1)
Start Date: 11/16/04 End Date: 1330
Time: 11/23/04 Time: 1245

Comment:

Test Day				New Sample					Old Sample				
		Conc.	Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Cond (µmhos/cm) (mmhos/cm)	Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Cond (µmhos/cm) (mmhos/cm)
Day 0	sample:	Control	A	7.6	24.2	7.5	230					
	1	100%	A	7.7	24.4	7.6	905					
	Measured by:			JD	JD	JD	JD					
	Recorded by:			JD	JD	JD	JD					
Day 1	sample:	Control	B	8.0	24.0	8.0	175	B	8.1	24.4	7.9	205
	1	100%	B	7.8	24.6	8.4	850	B	8.5	24.6	8.2	855
	Measured by:			MF	MF	MF	MF		MF	MF	MF	MF
	Recorded by:			MF	MF	MF	MF		MF	MF	MF	MF
Day 2	sample:	Control	C	8.0	24.1	7.5	185	C	8.1	24.0	7.7	190
	2	100%	C	7.4	24.4	7.7	1010	C	8.5	24.2	7.8	985
	Measured by:			MF	MF	MF	MF		MF	MF	MF	MF
	Recorded by:			MF	MF	MF	MF		MF	MF	MF	MF
Day 3	sample:	Control	D	8.1	24.3	7.8	180	D	8.1	24.8	7.7	190
	2	100%	D	7.9	24.3	7.7	970	D	8.4	24.9	7.7	960
	Measured by:			MF	MF	MF	MF		MF	MF	MF	MF
	Recorded by:			MF	MF	MF	MF		MF	MF	MF	MF
Day 4	sample:	Control	E	8.0	24.7	~~8.4~~ 8.6	180	E	8.1	24.0	8.6	225
	3	100%	E	8.4	25.0	8.2	930	E	8.3	25.5	8.2	885
	Measured by:			DN	DN	DN	DN		DN	DN	DN	DN
	Recorded by:			DN	DN	DN	DN		DN	DN	DN	DN
Day 5	sample:	Control	F	8.0	24.0	8.1	180	F	8.1	24.4	7.8	250
	3	100%	F	8.2	24.0	8.1	930	F	8.4	24.5	7.8	1000
	Measured by: DN			DN	DN	DN	DN		DN	DN	DN	DN
	Recorded by: DN			DN	DN	DN	DN		DN	DN	DN	DN
Day 6	sample:	Control	G	7.8	24.5	8.2	175	G	8.1	24.7	7.6	210
	3	100%	G	7.9	~~24.8~~ 24.4	8.5	945	G	8.3	24.5	7.7	925
	Measured by: DN			DN	DN	DN	DN		DN	DN	DN	DN
	Recorded by: DN			DN	DN	DN	DN		DN	DN	DN	DN
Day 7	sample:	Control	H					H	8.0	24.9	8.0	215
	3	100%	H					H (A)	8.1	24.6	8.1	940
	Measured by:								DN	DN	DN	DN
	Recorded by:								DN	DN	DN	DN
Day 8	sample:	Control						I				
	3	100%						I				
	Measured by:											
	Recorded by:											

(A) pH @ Day 7 = 8.3, 8.1 value was for D.O.. DN, 11/23/04

Test Rep. = Replicate Circle µmhos-cm or mmhos-cm

revised 6/24/04 mf

000017

Chronic Screening Bioassay Benchsheet

Sample Identification, Test Conditions and Physical Chemistry

State of Florida
Department of Environmental Protection
Biology Laboratory Chronic Screening Bioassay
P. promelas and *M. beryllina* Bench Sheet

Sample Source: Pensacola MainStreet AWWTP
Address: 401 W. Government St.
County: Escambia
NPDES Permit #FL 0021440
Contact/District Glenn Butts / NW
Start Date 11/16/04 Time 1330 End Date: 11/23/04 Time 1230
LIMS entry: 12-3-04 MK Verified: 12-3-04 SP
Incubator # 3 Temperature Range: 25.1 °C - 25.7°C
Room B246 Temperature Range: 24.0°C - 24.3°C
Feeding: 2 X Daily Artemia Lot:#: 4125425G

P. promelas SOP#: TA07_09 *M. beryllina* SOP#: TA07_14
Light Intensity : 50 - 100 ft. candles (yes) no
Photoperiod : 16 light 8 dark (yes) no
Chamber size : 1 L Organism Batch #: 29
Sample volume : 500 ml Organism age : 1 hours (days)
Organism: (*P. promelas*) *M.beryllina* (circle one)

Water Quality Parameters

	Field Chlorine mg/L			Lab Chlorine mg/L			Alkalinity mg/L as $CaCO_3$			Hardness mg/L as $CaCO_3$		
Lab Sample #:	1	2	3	1	2	3	1	2	3	1	2	3
Sample:	Not measured	Not measured	Not measured	<0.03	0.04	0.03	311	373	350	138	173	325
Diluent/Control:				<0.03	~~0.04~~ DN	<0.03	86	~~H78~~	85	117	117	124
Method:	—	—	—	Hach	Hach	Hach	Hach	Hach	Hach	Hach	Hach	Hach
Measured by:	—	—	—	JD/SP	DN	DN	JD	JD	JD	JD	JD	DN
Verified by:	MF	MF	DN	DN	MF	MF	DN	DN	DN	DN	DN	~~MF/DN~~

MF DN verified Diluent 11-29-04

	Conductivity (circle one) umhos-cm		mmhos-cm	Ammonia mg/L			Salinity ‰		
Lab Sample#:	1	2	3	1	2	3	1	2	3
Sample:	932	1030	972	0.416	0.637	2.26	<1	<1	<1
Diluent/Control:	340	350	355	<0.017	<0.017	<0.017	<1	<1	<1
Method:	Mettler	Mettler	Mettler	Denver	Denver	Denver	Mettler	Mettler	Mettler
Measured by:	JD	DN	DN	MF	MF	DN	DN	DN	DN
Verified by:	DN	MF	MF	DN	DN	~~MF~~ DN	MF	MF	MF

conv. = conversion based on conductivity and temperature

Sample Received	LAB ID #	LIMS SAMPLE #	LIMS JOB #
Test Day 0	Sample: 1	796991	TLH - 2004 - 11-17-18
Test Day 2	Sample: 2	797813	TLH - 2004 - 11-18-84
Test Day 4	Sample: 3	798664	TLH - 2004 - 11-23-14

Lab Sample #	Collection Date/Time	Received Date/Time
1	11/14/04 / 0800	11/16/04 / 1110
2	11/17/04 / 0940	11/18/04 / 1100
3	11/19/04 / 0800	11/20/04 / 1200

Diluent / Control Batch #:	Days Used
MHW / 26	4
MHW / 27	3

Investigators' signatures
Deanna Millerson
Sarah Pinchard
James Dowd
Marshall Fairbeth
Robert Worrow

reviewer: Nicole Wellendorf

Comments: (A) Diluent Control Lab Cl = <0.03 mg/L. D.N. 11/19/04.
Lowest observed Effect Concentration for growth = 100% 0.4mg/L
the mean weight in the controls was 0.480mg/organism
the mean weight in the 100% ample was 0.316mg/organism
NOEC = <100%

revised 6/14/04 JF

000022

Test Page 1

Chronic Screening Test Survival Benchsheet

Facility: Pensacola Main Street AWWTP

LIMS Sample Number: 796991
(for Lab Sample # 1)

State of Florida
Department of Environmental Protection
Biology Laboratory Chronic Screening Bioassay
***P. promelas* SOP TA07_09 *M. beryllina* SOP TA07_14**

Organism: (*P. promelas*) *M.beryllina* (circle one)

		TEST DAY							
Concentration	Replicate	0	1	2	3	4	5	6	7
Control	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10
100 %	A	10	10	10	10	10	10	10	10
sample	B	10	10	10	9 10	9	9	9	9
concentration	C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10
Control	A	10							
	B	10							
	C	10							
	D	10							
%	A	10							
sample	B	10							
concentration	C	10							
	D	10							
Loaded by: SD	Checked by: [redacted]		SD	SD	SD	SD	SD	SD	(illegible)
Verified by: [redacted]									

Survival	%CV	PMSD
Control	0.0	3.13

Survival	Table	Calculated	dF
T-test	1.9432	[illegible]	6

Comments:

revised 6/24/04 MF

Biology Laboratory Chronic Screening Bioassay Benchsheet
Parameters
P. promelas **SOP TA-07_09** ***M. beryllina*** **SOP TA-07_14**

Sample Source: Pensacola Main St. AWWTP
LIMS Sample #: 796991 (for Lab sample #1)
Start Date: 11/2/04 End Date: 11/23/04
Time: 1330 Time: 1230

Test Day		Conc.	New Sample: Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Cond (µmhos/cm) (mmhos/cm)	Salinity ppth	Old Sample: Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Cond (µmhos/cm) (mmhos/cm)	Salinity ppth
Day 0	sample:	Control	A	7.8	24.5	7.6	340	<1						
	1	100%	A	7.7	24.6	7.6	920	<1						
	Measured by:			JD	JD	JD	JD	JD						
	Recorded by:			JD	JD	JD	JD	JD						
Day 1	sample:	Control	B	8.2	24.5	8.9	445	<1	B	8.2	24.5	8.7	430	<1
	1	100%	B	7.9	25.0	8.7	920	<1	B	8.2	25.6	6.7	990	<1
	Measured by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Recorded by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
Day 2	sample:	Control	C	7.9	24.0	7.4	360	<1	C	7.8	24.0	7.4	310	<1
	2	100%	C	7.5	24.2	5.0	(A)	<1	C	8.1	24.2	5.0	950	<1
	Measured by:			DN	DN	DN	DN	DN		DN	DN	DN	DN	DN
	Recorded by:			DN	DN	DN	DN	DN		DN	DN	DN	DN	DN
Day 3	sample:	Control	D	7.9	24.3	7.5	340	<1	D	7.7	25.4	7.0	400	<1
	2	100%	D	7.7	24.9	6.5	980	<1	D	7.9	25.9	6.5	475	<1
	Measured by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Recorded by:			JD	JD	JD/DN	JD	JD		JD	JD	JD	JD	JD
Day 4	sample:	Control	A	8.0	24.7	8.3	375	<1	A	7.2	24.1	8.1	375	<1
	3	100%	A	8.2	24.6	8.3	935	<1	A	8.1	24.2	8.0	940	<1
	Measured by:			DN	DN	DN	DN	DN		DN	DN	DN	DN	DN
	Recorded by:			DN	DN	DN	DN	DN		DN	DN	DN	DN	DN
Day 5	sample:	Control	B	7.7	24.3	7.6	350	<1	B	8.0	24.5	7.5	355	<1
	3	100%	B	7.8	24.5	7.4	930	<1	B	8.4	24.5	7.4	815	<1
	Measured by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Recorded by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
Day 6	sample:	Control	C	7.9	24.6	7.2	355	<1	C	7.9	24.7	7.3	360	<1
	3	100%	C	7.7	24.7	8.2	945	<1	C	8.3	24.7	7.7	870	<1
	Measured by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
	Recorded by:			JD	JD	JD	JD	JD		JD	JD	JD	JD	JD
Day 7	sample:	Control							D	7.3	24.0	7.9	350	<1
	3	100%							D	8.2	24.0	8.0	910	<1
	Measured by:									DN	DN	DN	DN	DN
	Recorded by:									DN	DN	DN	DN	DN

Test Rep. = Replicate Record Salinity < 1 if freshwater Circle µmhos-cm or mmhos-cm

Comments:
Beginning this entry is for Day 3 old DO=7.5 MF 12-17-04

revised 6/24/04 mf

(A) New Sample Day 2: Ctrl DO 7.8, Cond. 350 µ; 100%: DO 7.0, Cond. 1005 µ
Temp: Ctrl 24.3 °C; 100% 24.5 °C
First measurements were D.O. from old sample

(B) Conductivity
(C) D.O. = 355 mg/L DN. 11/24/04 This entry should be MF 12-17-04 Day 4 new sample DO and Conductivity

000024

Chronic Screening Test Weighing Benchsheet

State of Florida
Department of Environmental Protection
Biology Laboratory Chronic Screening Bioassay
P. promelas and *M. beryllina* Bench Sheet
SOP TA06_21

Facility: Pensacola Main Street LWWTP

LIMS Sample Number: 796991
(for Lab Sample # 1)

Concentration	Replicate	Pan #	Pan wt. g	Pan + Fish g	Fish wt. g	Original # Fish	Mean wt. mg
			mean wt = fish wt divided by 10 convert g to mg: move decimal 3 places to right				
Control	A	41	0.02573	0.0298	0.00407	10	0.407
	B	42	0.02537	0.0303	0.00493	10	0.493
	C	43	0.02459	0.0292	0.00461	10	0.461
	D	44	0.02571	0.0313	0.00559	10	0.559
100% sample	A	45	0.02586	0.0291	0.00324	10	0.324
	B	46	0.02571	0.0277	0.00199	10	0.199
	C	47	0.02538	0.0289	0.00352	10	0.352
	D	48	0.02681	0.0307	0.00389	10	0.389
Control	A					10	
	B					10	
	C					10	
	D					10	
% sample	A					10	
	B					10	
	C					10	
	D					10	
	Weighed by initials:		DN	MF			

Growth	%CV	PMSD
Control	13,2	21,03

Growth	Table	Calculated	dF
T-test	1,94300	3,15239	6

MF Pmsmm. 11-23-04

Drying	
Temperature °C:	105
Hours:	8

Tare Weighing Date: 11/22/04 Final Weighing Date: 11-27-04

		Measured Value		S-weight Value
Tare Pan 1 after Pan 5	0.02577 @ 0.02573	S-weights	@	0.01000
Tare Pan 1 after Pan 8	0.02574 @ 0.02573	at tare	0.04000 @	0.04000
Final Pan 1 after Pan 5	0.0298 @ 0.0298	S-weights	0.0100 @	0.0100
Final Pan 1 after Pan 8	0.0293 @ 0.0293	at final	0.0400 @	0.0400

Comments: final weights measured on chemistry balance. weighing to 0.0001g. MF 11-29-04

revised 6/21/04 MF

000026

Appendix 2. Chemical Analyses performed on the effluent from the E.C.U.A. Main Street WWTP Outfall D-001, sampled on November 15, 2004.

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
11/14/2004 8:00	#1	Bio-AGP/LimNut	Algal Growth Potential	24.5	mg DryWt/L		0.3	0.9
11/14/2004 8:00	#1	Bio-AGP/LimNut	AGP-Salinity Adjusted	4.08	mg DryWt/L		0.3	0.9
11/14/2004 8:00	#1	Bio-BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	3.4	mg/L	Q		
11/14/2004 8:00	#1	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	0.85	ug/L	UQ	0.85	2.6
11/14/2004 8:00	#1	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	0.85	ug/L	UQ	0.85	2.6
11/14/2004 8:00	#1	Bio-Toxicology	Bioassay-Chronic-Scrn-FW-C.dubia	100	NOEC	K		
11/14/2004 8:00	#1	Bio-Toxicology	Bioassay-Chronic-Scrn-FW-Fish	100	NOEC	K		
11/14/2004 8:00	#1	BNA-Water	1,2,4-Trichlorobenzene	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	1,2-Dichlorobenzene	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	1,3-Dichlorobenzene	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	1,4-Dichlorobenzene	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	2,4,6-Trichlorophenol	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	2,4-Dichlorophenol	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	2,4-Dimethylphenol	48	ug/L	U	48	190
11/14/2004 8:00	#1	BNA-Water	2,4-Dinitrophenol	14	ug/L	UJ	14	58
11/14/2004 8:00	#1	BNA-Water	2,4-Dinitrotoluene	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	2,6-Dinitrotoluene	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	2-Chloronaphthalene	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	2-Chlorophenol	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	2-Methyl-4,6-dinitrophenol	2.9	ug/L	U	2.9	12
11/14/2004 8:00	#1	BNA-Water	2-Nitrophenol	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	3,3'-Dichlorobenzidine	38	ug/L	U	38	150
11/14/2004 8:00	#1	BNA-Water	4,4'-DDD	1.4	ug/L	U	1.4	5.8
11/14/2004 8:00	#1	BNA-Water	4,4'-DDE	1.4	ug/L	U	1.4	5.8
11/14/2004 8:00	#1	BNA-Water	4,4'-DDT	1.4	ug/L	U	1.4	5.8
11/14/2004 8:00	#1	BNA-Water	4-Bromophenyl phenyl ether	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	4-Chloro-3-methylphenol	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	4-Chlorophenyl phenyl ether	1.9	ug/L	U	1.9	7.7
11/14/2004 8:00	#1	BNA-Water	4-Nitrophenol	14	ug/L	U	14	58
11/14/2004 8:00	#1	BNA-Water	Acenaphthene	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	Acenaphthylene	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	Aldrin	1.4	ug/L	U	1.4	5.8
11/14/2004 8:00	#1	BNA-Water	Anthracene	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	Benzidine	96	ug/L	U	96	380
11/14/2004 8:00	#1	BNA-Water	Benzo(a)anthracene	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	Benzo(a)pyrene	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	Benzo(b)fluoranthene	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	Benzo(g,h,i)perylene	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	Benzo(k)fluoranthene	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	Bis(2-chloroethoxy)methane	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	Bis(2-chloroethyl)ether	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	Bis(2-chloroisopropyl)ether	2.9	ug/L	U	2.9	12
11/14/2004 8:00	#1	BNA-Water	Bis(2-ethylhexyl)phthalate	14	ug/L	U	14	58
11/14/2004 8:00	#1	BNA-Water	Butyl benzyl phthalate	4.8	ug/L	U	4.8	19
11/14/2004 8:00	#1	BNA-Water	Chrysene	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	Di-n-butyl phthalate	4.8	ug/L	U	4.8	19
11/14/2004 8:00	#1	BNA-Water	Di-n-octyl phthalate	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	Dibenzo(a,h)anthracene	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	Dieldrin	1.4	ug/L	U	1.4	5.8
11/14/2004 8:00	#1	BNA-Water	Diethyl phthalate	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	Dimethyl phthalate	48	ug/L	U	48	190
11/14/2004 8:00	#1	BNA-Water	Endosulfan I	3.8	ug/L	UJ	3.8	15
11/14/2004 8:00	#1	BNA-Water	Endosulfan II	3.8	ug/L	U	3.8	15
11/14/2004 8:00	#1	BNA-Water	Endosulfan sulfate	1.4	ug/L	U	1.4	5.8
11/14/2004 8:00	#1	BNA-Water	Endrin	1.4	ug/L	UJ	1.4	5.8
11/14/2004 8:00	#1	BNA-Water	Endrin aldehyde	3.8	ug/L	U	3.8	15
11/14/2004 8:00	#1	BNA-Water	Fluoranthene	0.96	ug/L	U	0.96	3.8

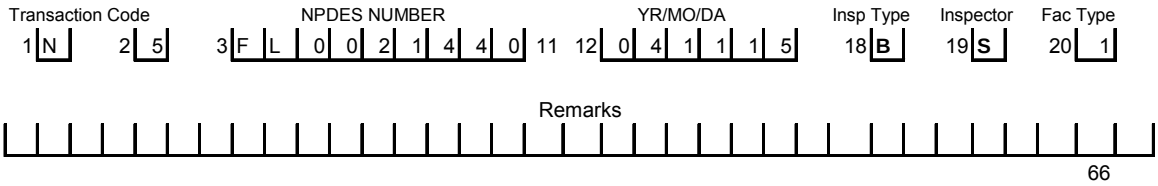
11/14/2004 8:00	#1	BNA-Water	Fluorene	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	Heptachlor	1.4	ug/L	U	1.4	5.8
11/14/2004 8:00	#1	BNA-Water	Heptachlor epoxide	1.4	ug/L	U	1.4	5.8
11/14/2004 8:00	#1	BNA-Water	Hexachlorobenzene	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	Hexachlorobutadiene	2.9	ug/L	U	2.9	12
11/14/2004 8:00	#1	BNA-Water	Hexachlorocyclopentadiene	2.9	ug/L	U	2.9	12
11/14/2004 8:00	#1	BNA-Water	Hexachloroethane	2.9	ug/L	U	2.9	12
11/14/2004 8:00	#1	BNA-Water	Indeno(1,2,3-cd)pyrene	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	Isophorone	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	N-Nitrosodi-n-propylamine	1.9	ug/L	U	1.9	7.7
11/14/2004 8:00	#1	BNA-Water	N-Nitrosodimethylamine	1.9	ug/L	U	1.9	7.7
11/14/2004 8:00	#1	BNA-Water	N-Nitrosodiphenylamine	2.9	ug/L	U	2.9	12
11/14/2004 8:00	#1	BNA-Water	Naphthalene	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	Nitrobenzene	1.9	ug/L	U	1.9	7.7
11/14/2004 8:00	#1	BNA-Water	Pentachlorophenol	2.9	ug/L	U	2.9	12
11/14/2004 8:00	#1	BNA-Water	Phenanthrene	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	Phenol	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	Pyrene	0.96	ug/L	U	0.96	3.8
11/14/2004 8:00	#1	BNA-Water	alpha-BHC	1.4	ug/L	U	1.4	5.8
11/14/2004 8:00	#1	BNA-Water	beta-BHC	1.4	ug/L	U	1.4	5.8
11/14/2004 8:00	#1	BNA-Water	delta-BHC	1.4	ug/L	U	1.4	5.8
11/14/2004 8:00	#1	BNA-Water	gamma-BHC	1.4	ug/L	U	1.4	5.8
11/15/2004 7:00	BLANKS	BNA-Water	1,2,4-Trichlorobenzene	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	1,2-Dichlorobenzene	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	1,3-Dichlorobenzene	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	1,4-Dichlorobenzene	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	2,4,6-Trichlorophenol	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	2,4-Dichlorophenol	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	2,4-Dimethylphenol	50	ug/L	U	50	200
11/15/2004 7:00	BLANKS	BNA-Water	2,4-Dinitrophenol	15	ug/L	UJ	15	59
11/15/2004 7:00	BLANKS	BNA-Water	2,4-Dinitrotoluene	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	2,6-Dinitrotoluene	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	2-Chloronaphthalene	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	2-Chlorophenol	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	2-Methyl-4,6-dinitrophenol	3	ug/L	U	3	12
11/15/2004 7:00	BLANKS	BNA-Water	2-Nitrophenol	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	3,3'-Dichlorobenzidine	40	ug/L	U	40	160
11/15/2004 7:00	BLANKS	BNA-Water	4,4'-DDD	1.5	ug/L	U	1.5	5.9
11/15/2004 7:00	BLANKS	BNA-Water	4,4'-DDE	1.5	ug/L	U	1.5	5.9
11/15/2004 7:00	BLANKS	BNA-Water	4,4'-DDT	1.5	ug/L	U	1.5	5.9
11/15/2004 7:00	BLANKS	BNA-Water	4-Bromophenyl phenyl ether	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	4-Chloro-3-methylphenol	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	4-Chlorophenyl phenyl ether	2	ug/L	U	2	7.9
11/15/2004 7:00	BLANKS	BNA-Water	4-Nitrophenol	15	ug/L	U	15	59
11/15/2004 7:00	BLANKS	BNA-Water	Acenaphthene	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	Acenaphthylene	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	Aldrin	1.5	ug/L	U	1.5	5.9
11/15/2004 7:00	BLANKS	BNA-Water	Anthracene	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	Benzidine	99	ug/L	U	99	400
11/15/2004 7:00	BLANKS	BNA-Water	Benzo(a)anthracene	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	Benzo(a)pyrene	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	Benzo(b)fluoranthene	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	Benzo(g,h,i)perylene	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	Benzo(k)fluoranthene	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	Bis(2-chloroethoxy)methane	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	Bis(2-chloroethyl)ether	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	Bis(2-chloroisopropyl)ether	3	ug/L	U	3	12
11/15/2004 7:00	BLANKS	BNA-Water	Bis(2-ethylhexyl)phthalate	15	ug/L	U	15	59
11/15/2004 7:00	BLANKS	BNA-Water	Butyl benzyl phthalate	5	ug/L	U	5	20
11/15/2004 7:00	BLANKS	BNA-Water	Chrysene	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	Di-n-butyl phthalate	5	ug/L	U	5	20
11/15/2004 7:00	BLANKS	BNA-Water	Di-n-octyl phthalate	0.99	ug/L	U	0.99	4

11/15/2004 7:00	BLANKS	BNA-Water	Dibenzo(a,h)anthracene	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	Dieldrin	1.5	ug/L	U	1.5	5.9
11/15/2004 7:00	BLANKS	BNA-Water	Diethyl phthalate	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	Dimethyl phthalate	50	ug/L	U	50	200
11/15/2004 7:00	BLANKS	BNA-Water	Endosulfan I	4	ug/L	UJ	4	16
11/15/2004 7:00	BLANKS	BNA-Water	Endosulfan II	4	ug/L	U	4	16
11/15/2004 7:00	BLANKS	BNA-Water	Endosulfan sulfate	1.5	ug/L	U	1.5	5.9
11/15/2004 7:00	BLANKS	BNA-Water	Endrin	1.5	ug/L	UJ	1.5	5.9
11/15/2004 7:00	BLANKS	BNA-Water	Endrin aldehyde	4	ug/L	U	4	16
11/15/2004 7:00	BLANKS	BNA-Water	Fluoranthene	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	Fluorene	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	Heptachlor	1.5	ug/L	U	1.5	5.9
11/15/2004 7:00	BLANKS	BNA-Water	Heptachlor epoxide	1.5	ug/L	U	1.5	5.9
11/15/2004 7:00	BLANKS	BNA-Water	Hexachlorobenzene	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	Hexachlorobutadiene	3	ug/L	U	3	12
11/15/2004 7:00	BLANKS	BNA-Water	Hexachlorocyclopentadiene	3	ug/L	U	3	12
11/15/2004 7:00	BLANKS	BNA-Water	Hexachloroethane	3	ug/L	U	3	12
11/15/2004 7:00	BLANKS	BNA-Water	Indeno(1,2,3-cd)pyrene	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	Isophorone	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	N-Nitrosodi-n-propylamine	2	ug/L	U	2	7.9
11/15/2004 7:00	BLANKS	BNA-Water	N-Nitrosodimethylamine	2	ug/L	U	2	7.9
11/15/2004 7:00	BLANKS	BNA-Water	N-Nitrosodiphenylamine	3	ug/L	U	3	12
11/15/2004 7:00	BLANKS	BNA-Water	Naphthalene	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	Nitrobenzene	2	ug/L	U	2	7.9
11/15/2004 7:00	BLANKS	BNA-Water	Pentachlorophenol	3	ug/L	U	3	12
11/15/2004 7:00	BLANKS	BNA-Water	Phenanthrene	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	Phenol	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	Pyrene	0.99	ug/L	U	0.99	4
11/15/2004 7:00	BLANKS	BNA-Water	alpha-BHC	1.5	ug/L	U	1.5	5.9
11/15/2004 7:00	BLANKS	BNA-Water	beta-BHC	1.5	ug/L	U	1.5	5.9
11/15/2004 7:00	BLANKS	BNA-Water	delta-BHC	1.5	ug/L	U	1.5	5.9
11/15/2004 7:00	BLANKS	BNA-Water	gamma-BHC	1.5	ug/L	U	1.5	5.9
11/14/2004 8:00	#1	GC-Water	Alachlor	0.58	ug/L	U	0.58	2.3
11/14/2004 8:00	#1	GC-Water	Ametryn	0.049	ug/L	U	0.049	0.2
11/14/2004 8:00	#1	GC-Water	Atrazine	0.49	ug/L		0.049	0.2
11/14/2004 8:00	#1	GC-Water	Azinphos Methyl	0.049	ug/L	U	0.049	0.2
11/14/2004 8:00	#1	GC-Water	Bromacil	0.19	ug/L	U	0.19	0.76
11/14/2004 8:00	#1	GC-Water	Butylate	0.19	ug/L	U	0.19	0.76
11/14/2004 8:00	#1	GC-Water	Chlorpyrifos Ethyl	0.049	ug/L	U	0.049	0.2
11/14/2004 8:00	#1	GC-Water	Chlorpyrifos Methyl	0.097	ug/L	U	0.097	0.39
11/14/2004 8:00	#1	GC-Water	Diazinon	0.049	ug/L	UJ	0.049	0.2
11/14/2004 8:00	#1	GC-Water	Ethion	0.049	ug/L	U	0.049	0.2
11/14/2004 8:00	#1	GC-Water	Ethoprop	0.097	ug/L	U	0.097	0.39
11/14/2004 8:00	#1	GC-Water	Fenamiphos	0.19	ug/L	U	0.19	0.76
11/14/2004 8:00	#1	GC-Water	Fonofos	0.097	ug/L	U	0.097	0.39
11/14/2004 8:00	#1	GC-Water	Hexazinone	0.097	ug/L	U	0.097	0.39
11/14/2004 8:00	#1	GC-Water	Malathion	0.15	ug/L	U	0.15	0.6
11/14/2004 8:00	#1	GC-Water	Metalaxyl	0.24	ug/L	U	0.24	0.96
11/14/2004 8:00	#1	GC-Water	Metolachlor	0.49	ug/L	U	0.49	2
11/14/2004 8:00	#1	GC-Water	Metribuzin	0.097	ug/L	U	0.097	0.39
11/14/2004 8:00	#1	GC-Water	Mevinphos	0.29	ug/L	U	0.29	1.2
11/14/2004 8:00	#1	GC-Water	Naled	0.78	ug/L	UJ	0.78	3.1
11/14/2004 8:00	#1	GC-Water	Norflurazon	0.097	ug/L	U	0.097	0.39
11/14/2004 8:00	#1	GC-Water	Parathion Ethyl	0.15	ug/L	U	0.15	0.6
11/14/2004 8:00	#1	GC-Water	Parathion Methyl	0.097	ug/L	U	0.097	0.39
11/14/2004 8:00	#1	GC-Water	Phorate	0.049	ug/L	U	0.049	0.2
11/14/2004 8:00	#1	GC-Water	Prometryn	0.15	ug/L	U	0.15	0.6
11/14/2004 8:00	#1	GC-Water	Simazine	0.049	ug/L	U	0.049	0.2
11/15/2004 7:00	BLANKS	GC-Water	Alachlor	0.58	ug/L	U	0.58	2.3
11/15/2004 7:00	BLANKS	GC-Water	Ametryn	0.049	ug/L	U	0.049	0.2
11/15/2004 7:00	BLANKS	GC-Water	Atrazine	0.049	ug/L	U	0.049	0.2
11/15/2004 7:00	BLANKS	GC-Water	Azinphos Methyl	0.049	ug/L	U	0.049	0.2

11/15/2004 7:00	BLANKS	GC-Water	Bromacil	0.19	ug/L	U	0.19	0.76
11/15/2004 7:00	BLANKS	GC-Water	Butylate	0.19	ug/L	U	0.19	0.76
11/15/2004 7:00	BLANKS	GC-Water	Chlorpyrifos Ethyl	0.049	ug/L	U	0.049	0.2
11/15/2004 7:00	BLANKS	GC-Water	Chlorpyrifos Methyl	0.097	ug/L	U	0.097	0.39
11/15/2004 7:00	BLANKS	GC-Water	Diazinon	0.049	ug/L	UJ	0.049	0.2
11/15/2004 7:00	BLANKS	GC-Water	Ethion	0.049	ug/L	U	0.049	0.2
11/15/2004 7:00	BLANKS	GC-Water	Ethoprop	0.097	ug/L	U	0.097	0.39
11/15/2004 7:00	BLANKS	GC-Water	Fenamiphos	0.19	ug/L	U	0.19	0.76
11/15/2004 7:00	BLANKS	GC-Water	Fonofos	0.097	ug/L	U	0.097	0.39
11/15/2004 7:00	BLANKS	GC-Water	Hexazinone	0.097	ug/L	U	0.097	0.39
11/15/2004 7:00	BLANKS	GC-Water	Malathion	0.15	ug/L	U	0.15	0.6
11/15/2004 7:00	BLANKS	GC-Water	Metalaxyl	0.24	ug/L	U	0.24	0.96
11/15/2004 7:00	BLANKS	GC-Water	Metolachlor	0.49	ug/L	U	0.49	2
11/15/2004 7:00	BLANKS	GC-Water	Metribuzin	0.097	ug/L	U	0.097	0.39
11/15/2004 7:00	BLANKS	GC-Water	Mevinphos	0.19	ug/L	U	0.19	0.76
11/15/2004 7:00	BLANKS	GC-Water	Naled	0.78	ug/L	UJ	0.78	3.1
11/15/2004 7:00	BLANKS	GC-Water	Norflurazon	0.097	ug/L	U	0.097	0.39
11/15/2004 7:00	BLANKS	GC-Water	Parathion Ethyl	0.15	ug/L	U	0.15	0.6
11/15/2004 7:00	BLANKS	GC-Water	Parathion Methyl	0.097	ug/L	U	0.097	0.39
11/15/2004 7:00	BLANKS	GC-Water	Phorate	0.049	ug/L	U	0.049	0.2
11/15/2004 7:00	BLANKS	GC-Water	Prometryn	0.15	ug/L	U	0.15	0.6
11/15/2004 7:00	BLANKS	GC-Water	Simazine	0.049	ug/L	U	0.049	0.2
11/14/2004 8:00	#1	Mercury-Water	Mercury	0.12	ug/L	U	0.12	0.5
11/15/2004 7:00	BLANKS	Mercury-Water	Mercury	0.12	ug/L	U	0.12	0.5
11/14/2004 8:00	#1	Metals-Water	Aluminum	367	ug/L		5	20
11/14/2004 8:00	#1	Metals-Water	Arsenic	6	ug/L	U	6	24
11/14/2004 8:00	#1	Metals-Water	Cadmium	0.075	ug/L	U	0.075	0.3
11/14/2004 8:00	#1	Metals-Water	Calcium	112	mg/L		0.05	0.2
11/14/2004 8:00	#1	Metals-Water	Chromium	2	ug/L	U	2	8
11/14/2004 8:00	#1	Metals-Water	Copper	3.6	ug/L		0.75	3
11/14/2004 8:00	#1	Metals-Water	Iron	176	ug/L		10	40
11/14/2004 8:00	#1	Metals-Water	Lead	0.98	ug/L		0.075	0.3
11/14/2004 8:00	#1	Metals-Water	Magnesium	14	mg/L		0.02	0.08
11/14/2004 8:00	#1	Metals-Water	Nickel	4.7	ug/L	I	2	8
11/14/2004 8:00	#1	Metals-Water	Selenium	1.1	ug/L	U	1.1	4.4
11/14/2004 8:00	#1	Metals-Water	Silver	0.25	ug/L		0.02	0.08
11/14/2004 8:00	#1	Metals-Water	Zinc	20	ug/L		3	12
11/15/2004 7:00	BLANKS	Metals-Water	Aluminum	5	ug/L	U	5	20
11/15/2004 7:00	BLANKS	Metals-Water	Arsenic	6	ug/L	U	6	24
11/15/2004 7:00	BLANKS	Metals-Water	Cadmium	0.075	ug/L	U	0.075	0.3
11/15/2004 7:00	BLANKS	Metals-Water	Calcium	0.05	mg/L	U	0.05	0.2
11/15/2004 7:00	BLANKS	Metals-Water	Chromium	2	ug/L	U	2	8
11/15/2004 7:00	BLANKS	Metals-Water	Copper	0.75	ug/L	U	0.75	3
11/15/2004 7:00	BLANKS	Metals-Water	Iron	10	ug/L	U	10	40
11/15/2004 7:00	BLANKS	Metals-Water	Lead	0.075	ug/L	U	0.075	0.3
11/15/2004 7:00	BLANKS	Metals-Water	Magnesium	0.02	mg/L	U	0.02	0.08
11/15/2004 7:00	BLANKS	Metals-Water	Nickel	2	ug/L	U	2	8
11/15/2004 7:00	BLANKS	Metals-Water	Selenium	0.5	ug/L	U	0.5	2
11/15/2004 7:00	BLANKS	Metals-Water	Silver	0.02	ug/L	U	0.02	0.08
11/15/2004 7:00	BLANKS	Metals-Water	Zinc	3	ug/L	U	3	12
11/14/2004 8:00	#1	Nutrients-Liquid	Ammonia-N	0.14	mg N/L		0.01	0.02
11/14/2004 8:00	#1	Nutrients-Liquid	Kjeldahl Nitrogen	2.5	mg N/L		0.06	0.2
11/14/2004 8:00	#1	Nutrients-Liquid	NO2NO3-N	0.16	mg N/L			
11/14/2004 8:00	#1	Nutrients-Liquid	O-Phosphate-P	0.053	mg P/L	Q	0.004	0.01
11/14/2004 8:00	#1	Nutrients-Liquid	TSS	18	mg/L		4	16
11/14/2004 8:00	#1	Nutrients-Liquid	Total-P	0.59	mg P/L		0.02	0.06
11/14/2004 8:00	#1	Nutrients-Liquid	Turbidity	1.1	NTU	Q	0.05	0.05
11/15/2004 7:00	BLANKS	Nutrients-Liquid	Ammonia-N	0.075	mg N/L		0.01	0.02
11/15/2004 7:00	BLANKS	Nutrients-Liquid	Kjeldahl Nitrogen	0.06	mg N/L	UJ	0.06	0.2
11/15/2004 7:00	BLANKS	Nutrients-Liquid	NO2NO3-N	64	mg N/L	J	4	10
11/15/2004 7:00	BLANKS	Nutrients-Liquid	O-Phosphate-P	0.004	mg P/L	U	0.004	0.01
11/15/2004 7:00	BLANKS	Nutrients-Liquid	Total-P	0.02	mg P/L	U	0.02	0.06

The Bioassay of Escambia County Utilities Authority Main Street WWTP effluent sampled on November 15, 2004, NPDES #FL0021440.

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



The Priority Pollutants Analysis for Bioassay of Escambia County Utilities Authority Main Street WWTP effluent sampled on November 15, 2004, NPDES #FL0021440.

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

