Florida
Department of Environmental Protection

Bioassays of the Town of

Century Wastewater Treatment Plant

Century, Escambia County, Florida

NPDES #FL0032468

Sampled 5/25/93

August 1993

Biology Section
Division of Technical Services

Bioassays of the Town of

Century Wastewater Treatment Plant

Century, Escambia County, Florida

NPDES #FL0032468

Biology Section
Bureau of Laboratories
August 1993

Introduction

Town of Century WWTP, Century, Escambia County, Florida, NPDES #FL0032468, tests performed on 26 to 28 May, 1993.

This facility, located on Jefferson Street in Century, has a 0.45 MGD capacity. Treatment of wastewater consists of the extended aeration process, chlorination and dechlorination. Sludge is dried and hauled to the Perdido landfill. Treated effluent is discharged to the Escambia River.

The toxicity tests discussed in this report were performed in accordance with methods described by Weber, 1991, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, 4th Edition (EPA/600/4-90/027).

Results and Discussion

The FDEP Biology Section performed two 48-hour static acute screening bioassays on a sample of effluent from this facility. The test species used for these bioassays were the water flea, *Ceriodaphnia dubia*, and the bannerfin shiner, *Cyprinella leedsi* (formerly *Notropis leedsi*). The test results did not indicate toxicity.

Conclusion

The sample of effluent collected from this facility on 25 May, 1993, did not show toxicity.

Table 1. Concentration series and volumes used for the 48-hour static acute screening bioassays of the Town of Century Wastewater Treatment Plant effluent performed on 26 to 28 May, 1993.

Ceriodaphnia dubia (water flea)

Concentration	Dilution Water	Sample	Total Volume
Control	20 mL	0 mL	20 mL
100 %	0 mL	20 mL	20 mL

Cyprinella leedsi (bannerfin shiner, formerly *Notropis leedsi*)

Concentration	Dilution Water	Sample	Total Volume
Control	500 mL	0 mL	500 mL
100 %	0 mL	500 mL	500 mL

Table 2. Data recorded during the 48-hour acute screening bioassays of a sample of effluent from the Town of Century WWTP, Century, Escambia County, Florida, NPDES# FL0032468, performed on 26 to 28 May, 1993.

Facility:	Town of Century WWTP	NPDES #	FL0032468	Facility Type:	Wastewater Treatment Plant
Location:	Century	Contact / District:	Glenn Butts/NW		
County:	Escambia	Test type:	static acute screen		
Sample Collection Date:	5/25/93 Time: 0915	# tests:	2	Receiving Water:	Escambia River
Test Beginning Date:	5/26/93 Time: 1100	Chlorination Type:	Dechlorinated at plant		
Test Ending Date:	5/28/93 Time: 1130			Page 1 of 1	

Total Residual Cl2	mg/l	Method
Field:	< 0.01	-
Lab:	< 0.03	DR-100

Ammonia	Total (mg/l)	Unionized (mg/l)
Control Water (fish):	< 0.017	0.00
20% Dilute Mineral Water (cladocerans):	< 0.017	0.00
100% Sample:	< 0.017	0.00

Alk & Hardness	Alkalinity (mg/l)	Hardness (mg/l)
Control Water (fish):	120	125
20% Dilute Mineral Water (cladocerans):	75	80
100% Sample:	35	125

Salinity (ppt)	
Control Water:	0
100% Sample:	0

Organism: ***Ceriodaphnia dubia*** Life stage: < 24 hours

	SURVIVAL			pH			Temperature			Dissolved Oxygen			Conductivity	
Concentrations	# at 0 hr	Live at 24 hr	Live at 48 hr	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	48 hour
Control	5	5	5	8.0	-	8.1	23.9	-	24.3	7.9	-	7.5	175	180
Control	5	5	5	-	-	8.1	-	-	-	-	-	7.6	-	180
Control	5	5	5	-	-	8.1	-	-	-	-	-	7.6	-	180
Control	5	5	5	-	-	8.1	-	-	-	-	-	7.7	-	180
100%	5	5	5	7.0	-	7.4	25.0	-	24.3	7.0	-	7.7	520	530
100%	5	5	5	-	-	7.4	-	-	-	-	-	7.7	-	550
100%	5	5	5	-	-	7.4	-	-	-	-	-	7.7	-	560
100%	5	5	5	-	-	7.4	-	-	-	-	-	7.7	-	565

Organism: ***Notropis leedsi*** Age: 10 days

	SURVIVAL			pH			Temperature			Dissolved Oxygen			Conductivity	
Concentrations	# at 0 hr	Live at 24 hr	Live at 48 hr	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	48 hour
Control	5	5	5	7.8	8.0	8.1	23.1	24.3	23.7	7.8	7.8	7.1	245	310
Control	5	5	5	7.8	8.0	8.1	-	-	-	7.8	7.7	7.1	240	295
100%	5	5	5	7.0	7.1	7.2	25.2	24.3	23.7	7.1	7.0	6.6	585	630
100%	5	5	5	7.0	7.1	7.2	-	-	-	7.1	7.1	7.1	590	600

DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: Century - Effluent
Location:
County: ESCAMBIA
Contact/District: Glenn Botts / NW
NPDES Permit #: FL0032468 Outfall #:
93MAY 26-08 55743 Test 5/25/93

Sample Collection: Date 5/25/93 Time 09:15
Test Beginning: Date 5/26/93 Time 11:00
Test Ending: Date 5/28/93 Time 11:30
Organism Batch #: n/a Diluent Batch #: 10
Organism Age: <24 hrs
Test Organism: Ceriodaphnia Dubia

Test Type: (Screening) Definitive
(Static) Static Renewal | Flow-through

Test Number: 1 of 2

Remarks:
Removed numerous ostracods from water by screening prior to test initiation

Instrument Calibrations:

	pH	Temperature °C	D.O. mg/L	Conductivity µmhos/cm
0 hr	7.0 @ 7.0 9.0 @ 9.0	23.8 @ 23.8	8.4 @ 24.1	980 @ 1,000 9900 @ 10,000 @24.3
24 hr	7.0 @ 7.0 9.0 @ 9.0	24.2 @ 24.3	8.3 @ 24.5	985 @ 1,000 9910 @ 10,000 @24.5
48 hr	7.0 @ 7.0 9.0 @ 9.0	23.6 @ 23.7	8.4 @ 23.4	975 @ 1,000 9810 @ 10,000 @23.9

		Number Live			pH			Temperature (°C)			D.O. (mg/L)			Cond. (mmhos/cm) Cond. (µmhos/cm)		
Conc.	Chamber #	0	24	48	0	24	48	0	24	48	0	24	48	0	24	48
Control	A	5	5	5	8.0		8.1	23.9		24.3	7.9		7.5	175		180
Control	B	5	5	5			8.1						7.6			180
Control	C	5	5	5			8.1						7.6			180
Control	D	5	5	5			8.1						7.7			180
100%	A	5	5	5	7.0		7.4	25.0		24.3	7.0		7.7	520		530
100%	B	5	5	5			7.4						7.7			550
100%	C	5	5	5			7.4						7.7			560
100%	D	5	5	5			7.4						7.7			565
Measured/Loaded by:		TR	TM	TR	TM	TM	TR	TM	TM	TR	TM	TM	TR	TM	TM	TR
Recorded by:		TR	TM	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR

Investigators' Signatures
Robin C. Rader
Linas Mikulskis

Reviewer

form updated 10/20/92

Water Quality Parameters	Salt Water/ Well Water	20% Min Water	Sample	Method	Measured by
Field Total Residual Cl2:			<0.01	—	GB
Lab Total Residual Cl2:	<0.03	<0.03	<0.03	DR-100	TM
Alkalinity:	120	75	35	Hach	TR
Hardness:	125	80	125	Hach	TR
Total Ammonia:	<0.017	<0.017	<0.017	Orion	MP

Cl_2 Blank: _____ Ammonia Meter Slope: -58.2 Ammonia Blank: <0.017 Sample Salinity: 0 ppt

DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: Century - Effluent
Location:
County: ESCAMBIA
Contact/District: Glenn Butts / NW
NPDES Permit #: FL0032468 Outfall #:

Sample Collection: Date 5/25/93 Time 09:15
Test Beginning: Date 5/26/93 Time 1100
Test Ending: Date 5/28/93 Time 11:30
Organism Batch #: 22 Diluent Batch #: well
Organism Age: 10 days
Test Organism: Notropis leedsi

Test Type: (Screening) | Definitive
(Static) | Static Renewal | Flow-through

Test Number: 2 of 2

Remarks:
Removed numerous ostracods from waters by screening prior to test

Instrument Calibrations:

	pH	Temperature °C	D.O. mg/L	Conductivity µmhos/cm
0 hr	7.0 @ 7.0 9.0 @ 9.0	23.8 @ 23.8	8.4 @ 24.1	980 @ 1,000 @24 9900 @ 10,000
24 hr	7.0 @ 7.0 9.0 @ 9.0	24.2 @ 24.3	8.3 @ 24.5	985 @ 1,000 @24. 9910 @ 10,000
48 hr	7.0 @ 7.0 9.0 @ 9.0	23.6 @ 23.7	8.4 @ 23.4	975 @ 1,000 @23. 9810 @ 10,000

		Number Live			pH			Temperature (°C)			D.O. (mg/L)			Cond. (mmhos/cm) Cond. (µmhos/cm)		
Conc.	Chamber #	0	24	48	0	24	48	0	24	48	0	24	48	0	24	48
Control A	682	5	5	5	7.8	8.0	8.1	23.1	24.3	23.7	7.8	7.8	7.1	245	250	310
Control B	65	5	5	5	7.8	8.0	8.1				7.8	7.7	7.1	240	245	295
100% A	11	5	5	5	7.0	7.1	7.2	25.2	24.3	23.7	7.1	7.0	6.6	585	560	630
100% B	44	5	5	5	7.0	7.1	7.2				7.1	7.1	7.1	590	565	600
Measured/Loaded by:		TM	TM	TR	TM	TM	TR	TM	TM	TR	TM	TM	TR	TM	TM	TR
Recorded by:		TR	TM	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR

Investigators' Signatures
Robin G. Rader
Tina Mikulsky

Reviewer

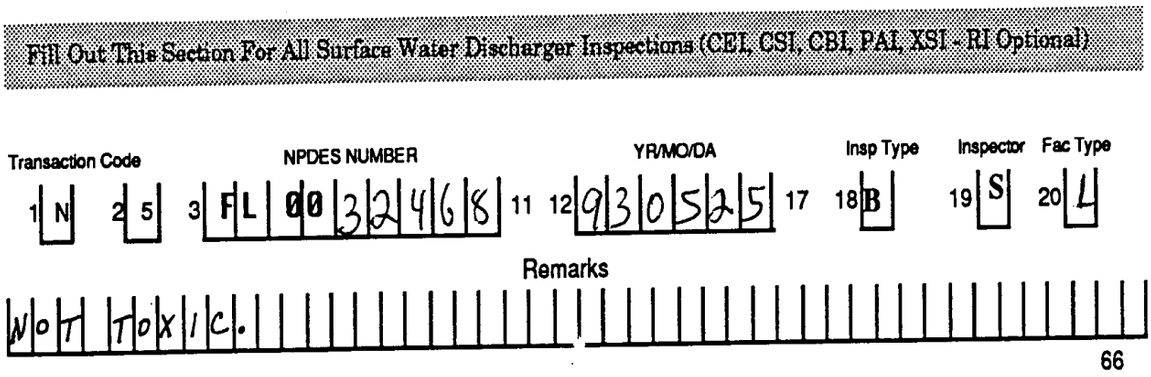
form updated 10/20/92

	Salt Water/ Well Water	20% Min Water	Sample	Method	Measured by
Field Total Residual Cl2:			<0.01	—	GB
Lab Total Residual Cl2:	<0.03	<0.03	<0.03	DR-100	TM
Alkalinity:	120	75	35	Hach	TR
Hardness:	125	80	125	Hach	TR
Total Ammonia:	<0.017	<0.017	<0.017	ORION	MF

Water Quality Parameters

Ammonia — Ammonia ··· Sample
Cl_2 Blank: ____ Meter Slope: ____ Blank: ____ Salinity: 0 ppt

The Bioassay of Town of Century WWTP effluent sampled on May 25, 1993, NPDES #FL0032468.



The Priority Pollutants Analyses for the Bioassay of Town of Century WWTP effluent sampled on May 25, 1993, NPDES #FL0032468.

