DEPARTMENT OF ENVIRONMENTAL REGULATION

STATE OF FLORIDA

Bioassays of City of

Graceville Wastewater Treatment Plant

Graceville, Jackson County, Florida

NPDES #FL0038555

Sampled 7/21/92

September 1992

Biology Section
Division of Technical Services

Bioassays of City of

Graceville Wastewater Treatment Plant

Graceville, Jackson County, Florida

NPDES #FL0038555

Biology Section
Bureau of Laboratories
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Introduction

City of Graceville WWTP, Jackson County, Florida, NPDES #FL0038555, tests performed on 22 to 24 July, 1992.

This facility is located on Mill Creek Road in Graceville. The wastewater treatment plant has a permitted flow of 1.1 mgd maximum monthly average. The facility has exceeded this permitted flow during rainy periods. The treatment process includes screening, grit removal, aeration, clarification, chlorination, and dechlorination prior to discharge to Holmes Creek.

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 FDER Biology Section performed two 48-hour static acute screening toxicity bioassays with a sample of effluent from this facility. The bioassay organisms used for these tests were the water flea, *Ceriodaphnia dubia*, and the bannerfin shiner, *Notropis leedsi*. The test results did not indicate toxicity.

Total residual chlorine and total ammonia were not detected in the sample.

Conclusion

The sample of effluent from this facility collected on 21 July, 1992, did not show toxicity.

Table 2. Data recorded during the 48-hour static acute screening bioassays of a sample of effluent from the City of Graceville WWTP, Jackson County, Florida, NPDES #FL0038555, on 22 to 24 July, 1992.

Facility:	**Graceville WWTP**		NPDES #	**FL0038555**	Facility Type: **WWTP**
Location:	Graceville		Contact/District:	Glen Butts / NW	
County:	Jackson		Test type:	static acute screen	
Sample Collection Date:	**7/21/92**	Time: 1010	# tests:	2	Receiving Water: Holmes Creek
Test Beginning Date:	7/22/92	Time: 1330	Chlorination Type:	**Dechlorinated at plant**	
Test Ending Date:	7/24/92	Time: 1330			**Page 1 of 1**

Total Residual Cl2	mg/l	Method
Field:	not measured	
Lab:	0.02	Hach DR-100

Ammonia	Total (mg/l)	Unionized (mg/l)
Control Water (fish):	0.00	0.00
Cond. Control Water (daphnids):	0.00	0.00
100% Sample:	0.00	0.00

Alk & Hardness	Alkalinity (mg/l)	Hardness (mg/l)
Control Water (fish):	118	122
Cond. Control Water (daphnids):	60	70
100% Sample:	59	79

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

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

	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	4	8.2	-	8.0	23.6	-	24.0	9.1	-	8.8	148	175
Control	5	5	5	-	-	8.0	-	-	-	-	-	8.9	-	-
Control	5	5	5	-	-	8.0	-	-	-	-	-	8.8	-	-
Control	5	5	5	-	-	8.0	-	-	-	-	-	8.8	-	-
100%	5	5	5	7.7	-	8.1	23.3	-	24.0	9.1	-	8.8	286	304
100%	5	5	5	-	-	8.1	-	-	-	-	-	8.8	-	-
100%	5	5	5	-	-	8.1	-	-	-	-	-	8.8	-	-
100%	5	5	5	-	-	8.1	-	-	-	-	-	8.8	-	-

Organism: ***Notropis leedsi*** Age: 11 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	24 hour
Control	5	5	5	7.8	8.1	8.4	23.8	23.5	23.3	9.3	8.6	8.8	-	-
Control	5	5	5	7.8	8.1	8.4	-	-	-	9.3	8.6	8.8	244	246
100%	5	5	5	7.7	8.0	8.2	23.8	23.3	23.3	9.2	8.7	8.8	-	-
100%	5	5	5	7.7	8.0	8.2	-	-	-	9.2	8.7	8.8	302	306

DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: Greenville WWTP
Address/City:
County: JACKSON
Contact/District: G. Butts / Northwest
NPDES Permit #: FL00 Outfall #:

Sample Collection: Date 7/21/92 Time 1010
Test Beginning: Date 7-22-92 Time 1330
Test Ending: Date 7-27-92 Time 1330
Test Organism: C. DUBIA
Life Stage/Age: < 24 HRS

92-JUL-22-05 37697

Test Number: 1 of 2 Test Type: (Screening) Definitive
(Static) Static Renewal | Flow-through

Remarks:

Instrument Calibrations:

	pH	DO	Temp	Cond
0 hr	7.0, 7.0, 10	8.4 @ 25°C	24.2 @ 24.3°C	987 @ 1000 (24°C); 9870 @ 10000
24 hr	7.0, 7.0, 10	8.4 @ 25°C	24.5 @ 24.5°C	1377 @ 24.2°C
48 hr	7.0, 7.0, 10	8.4 @ 25°C	24.7 @ 24.7°C	1378 @ 24.3°C

		Number Live			pH			Temp. (°C)			DO (mg/L)			Cond. (µmhos/cm)		
Conc.	Chamber #	0	24	48	0	24	48	0	24	48	0	24	48	0	24	48
control	A	5	5	4	8.2		8.0	23.6		24.0	9.1		8.8	148		175
control	B	5	5	5			8.0						8.9			
control	C	5	5	5			8.0						8.8			
control	D	5	5	5			8.0						8.8			
100%	A	5	5	5	7.7		8.1	23.3		24.0	9.1		8.8	286		304
100%	B	5	5	5			8.1						8.8			
100%	C	5	5	5			8.1						8.8			
100%	D	5	5	5			8.1						8.8			
Measured/Loaded by:		KP	MF	MF	MF		MF	MF		MF	MF		MF	MF		MF
Recorded by:		KP	MF	MF	KP		MF	KP		MF	KP		MF	KP		MF

Investigators' Signatures

Marshall Faircloth
Kim Pearce

Reviewer

Water-quality Parameters

	Well Water	Cond. Water	Sample	Method	Measured by
Field Tot. Resid. Cl2:			not measured		
Lab Tot. Resid. Cl2:	0.0	0.0	0.02	DR-100	KP
Alkalinity:	118	60	59	Hach	KP
Hardness:	122	70	79	Hach	KP
Total Ammonia:	0.0	0.0	0.0	Orion	MF

Ammonia Meter Slope: -56.4
Ammonia Blank: 0.0
Salinity Sample: 0 ppt

DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: Greenville WWTP
Address/City:
County: JACKSON
Contact/District: G Butts / Northwest
NPDES Permit #: FL00 Outfall #:

Sample Collection: Date 7/21/92 Time 1010
Test Beginning: Date 7-22-92 Time 1330
Test Ending: Date 7/24/92 Time 1330
Test Organism: N. LEEDSI
Life Stage/Age: 11 DAYS

Test Number: 2 of 2 Test Type: (Screening) Definitive
(Static) Static Renewal | Flow-through

Remarks:

Instrument Calibrations:

	pH	DO	Temp	Cond
0 hr	7@7.10,10	8.4@25°C	24@24.3°C	987@1000@24/25° 9870@10000
24 hr	7@7.10@10	8.4@25°C	24.5@24.5°C	1327@24.2°@1385
48 hr	7@7.10@10	8.4@25°C	24.7@24.7°C	1378@24.3

Conc.	Chamber #	Number Live 0	24	48	pH 0	24	48	Temp. (°C) 0	24	48	DO (mg/L) 0	24	48	Cond. (µmhos/cm) 0	24	48
control	149	5	5	5	7.8	8.1	8.4	23.8	23.5	23.3	9.3	8.6	8.8			
control	681	5	5	5	7.8	8.1	8.4				9.3	8.6	8.8	244	242	246
100%	74	5	5	5	7.7	8.0	8.2	23.8	23.3	23.3	9.2	8.7	8.8			
100%	13	5	5	5	7.7	8.0	8.2				9.2	8.7	8.8	302	302	306
Measured/Loaded by:		MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF
Recorded by:		MF	MF	MF	KP	MF	MF	KP	MF	MF	KP	MF	MF	KP	MF	MF

Water-quality Parameters

	Well Water	Cond. Water	Sample	Method	Measured by
Field Tot. Resid. Clz:			not measured		
Lab Tot. Resid. Clz:	0.0	0.0	0.02	DR-100	KP
Alkalinity:	118	60	59	Hach	KP
Hardness:	122	70	79	Hach	KP
Total Ammonia:	0.0	0.0	0.0	Orion	MF

Ammonia Meter Slope: -56.4 Ammonia Blank: 0.0 Salinity Sample: 0 ppt

Investigators' Signatures
Marshall Sandlet
Kim Pearce

Reviewer

The Bioassay of City of Graceville WWTP effluent sampled on July 21, 1992, NPDES# FL0038555.

