Bioassays of

Fountains Condominiums Sewage Treatment Plant

Ponte Vedra Beach, St. Johns County, Florida

NPDES #FL0036391

Sampled 8/18/92

October 1992

Biology Section
Division of Technical Services

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Bureau of Laboratories
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Introduction

The Fountains Condominiums STP, Ponte Vedra Beach, St. Johns County, Florida, NPDES #FL0036391, tests performed on 19 to 21 August, 1992.

This facility is located at A1A South in Ponte Vedra Beach. The wastewater treatment plant has a 0.04 MGD capacity. Treatment of wastewater consists of contact stabilization and chlorination. Chlorinated effluent flows to a polishing pond with subsequent discharge to a ditch and an unnamed swamp serving the Fountains Condominiums (NPDES files).

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 was measured in the field (0.1 mg/L) and in the lab (none detected). Total and unionized ammonia concentrations were 7.40 mg/L and 0.19 mg/L, respectively.

Conclusion

The sample of effluent collected on 18 August, 1992, from this facility did not show toxicity.

Table 1. Concentration series and volumes used for the 48-hour static acute screening bioassays of the Fountains Condominiums STP effluent performed on 19 to 21 August, 1992.

Ceriodaphnia dubia (water flea)

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

Notropis leedsi (bannerfin shiner)

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 Fountains Condominiums STP, Ponte Vedra Beach, St. Johns County, Florida, NPDES# FL00363911, performed on 19 to 21 August, 1992.

Facility:	**The Fountains Condominiums STP**		**NPDES #**	**FL0036391**	Facility Type: **Sewage Treatment**
Location:	Ponte Vedra Beach		Contact/District:	Ken Kohn / NE	
County:	St. Johns		Test type:	static acute screen	
Sample Collection Date:	**8/18/92**	Time: 1120	# tests:	2	Receiving Water: ditch to unnamed swamp
Test Beginning Date:	8/19/92	Time: 1330	Chlorination Type:	**chlorinated**	serving the condominiums
Test Ending Date:	8/21/92	Time: 1330			**Page 1 of 1**

Total Residual Cl2	mg/l	Method
Field:	0.1	Hach
Lab:	0.0	Hach

Ammonia	Total (mg/l)	Unionized (mg/l)
Control Water (fish):	0.00	0.00
Cond. Control Water (daphnids):	0.00	0.00
100% Sample:	7.40	0.19

Alk & Hardness	Alkalinity (mg/l)	Hardness (mg/l)
Control Water (fish):	1335	123
Cond. Control Water (daphnids):	71	78
100% Sample:	155	245

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

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

	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	8.6	-	8.2	23.8	-	24.4	8.4	-	8.1	154	170
Control	5	5	5	-	-	8.3	-	-	-	-	-	8.1	-	-
Control	5	5	5	-	-	8.3	-	-	-	-	-	8.1	-	-
Control	5	5	5	-	-	8.3	-	-	-	-	-	8.1	-	-
100%	5	5	5	7.7	-	8.9	23.7	-	24.9	7.8	-	8.7	710	722
100%	5	5	5	-	-	8.9	-	-	-	-	-	8.8	-	-
100%	5	5	5	-	-	8.9	-	-	-	-	-	8.8	-	-
100%	5	5	5	-	-	8.9	-	-	-	-	-	8.9	-	-

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	24 hour
Control	5	5	5	8.0	8.3	8.3	23.8	23.3	23.7	8.3	8.0	8.2	-	-
Control	5	5	5	8.0	8.3	8.4	-	-	-	8.3	8.0	8.1	243	247
100%	5	5	5	7.6	8.0	7.9	24.0	23.2	23.4	7.4	7.3	5.9	-	-
100%	5	5	5	7.6	8.0	7.9	-	-	-	7.4	7.3	5.7	736	749

Sample Source: Fountains Condo WWTP
Address/City:
County: St. Johns
Contact/District: Ken Kehn / NE
NPDES Permit #: FL0036391 Outfall #:

Sample Collection: Date 8/18/92 Time 1120
Test Beginning: Date 8/19/92 Time 1330
Test Ending: Date 8/21/92 Time 1330
Test Organism: Ceriodaphnia dubia
Life Stage/Age: < 24 hours

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

92-AUG-19-37 39734
sample log 8/21/92 MF

Remarks:

Instrument Calibrations:

	pH	DO	Temp	Cond
0 hr	7.0, 7.0, 10.0, 10	8.5 @ 24°C	23.7, 23.7°C	991 @ 23.9 9820
24 hr	7.0, 7.0, 10.0, 10	8.5 @ 24°C	23.7 @ 23.7	988 9880 @ 24.0°C
48 hr	7.0, 7.0, 10.0, 10	8.5 @ 24°C	24.2 @ 24.1	992 9910 @ 24.2

* 48 hr. results recorded in 24 hr. column. LM

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	A	5	5	5	8.6	8.2	23.8	24.4	8.4	8.1	154	170
Control	B	5	5	5		8.3				8.1		
Control	C	5	5	5		8.3				8.1		
Control	D	5	5	5		8.3				8.1	710	722
100%	A	5	5	5	7.7	8.9	23.7	24.9	7.8	8.7		
100%	B	5	5	5		8.9				8.8		
100%	C	5	5	5		8.9				8.8		
100%	D	5	5	5		8.9				8.9		
Measured/Loaded by:		MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF
Recorded by:		MF	MF	MF	MF	LM	MF	LM	MF	LM	MF	LM

Investigators' Signatures
Marshall Faircloth
Liz Miller

Reviewer

Water-quality Parameters

	Well Water	Cond. Water	Sample	Method	Measured by
Field Tot. Resid. Clz:			0.1	Hach	KK
Lab Tot. Resid. Clz:	0.0	0.0	0.0	Hach	MF
Alkalinity:	135	71	155	Hach	MF
Hardness:	123	78	245	Hach	MF
Total Ammonia:	0.0	0.0	7.4	Orion	MF

Ammonia Meter Slope: -57.2
Ammonia Blank: 0.0
Salinity Sample: 0 ppt

DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: Fountains Condo WWTP
Address/City:
County: St. Johns
Contact/District: K Kohn / Northeast
NPDES Permit #: FL00 3639/ Outfall #:

Sample Collection: Date 8/3/92 Time 1120
Test Beginning: Date 8/4/92 Time 1330
Test Ending: Date 8/4/92 Time 1330
Test Organism: Notropis leedsi
Life Stage/Age: 11 days

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

92 AAG 1937 39734
Sample log 8/4/92 mf

Remarks:

Instrument Calibrations:

	pH	DO	Temp	Cond
0 hr	7.0, 7.0, 10.0, 10	8.5 @ 24°C	23.7 @ 23.7	991 @ 23.9 / 982
24 hr	7.0, 7.0, 10.0, 10	8.5 @ 24°C	23.7 @ 23.7	988 / 980 @ 24°C
48 hr	7.0, 7.0, 10.0, 10	8.5 @ 24°C	24.2 @ 24.1	992 / 990 @ 24.2

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	65	5	5	5	8.0	8.3	8.3	23.8	23.3	23.7	8.3	8.0	8.2			
Control	68	5	5	5	8.0	8.3	8.4				8.3	8.0	8.1	243	242	247
100%	30	5	5	5	7.6	8.0	7.9	24.0	23.2	23.4	7.4	7.3	5.9			
100%	20	5	5	5	7.6	8.0	7.9				7.4	7.3	5.7	736	737	749
Measured/Loaded by:		mf	mf	mf	mf	mf	mf	mf	mf	mf	mf	mf	mf	mf	mf	mf
Recorded by:		mf	mf	mf	mf	mf	lm	mf	mf	lm	mf	mf	lm	mf	mf	lm

Investigators' Signatures

Marshall Faircloth

Liz McCleer

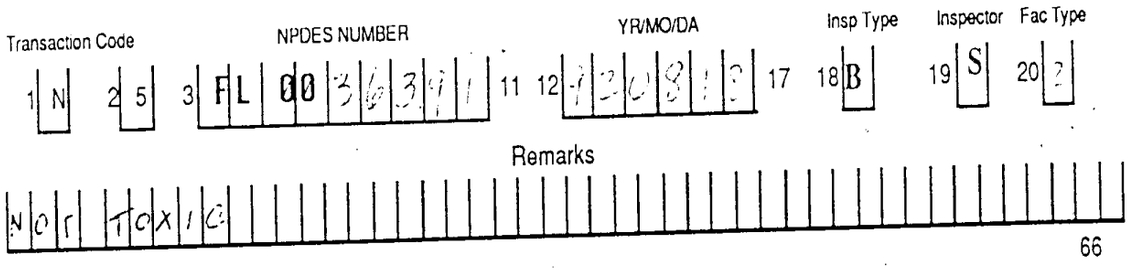
Reviewer

Water-quality Parameters

	Well Water	Cond. Water	Sample	Method	Measured by
Field Tot. Resid. Cl2:			0.1	Hach	KK
Lab Tot. Resid. Cl2:	0.0	0.0	0.0	Hach	mf
Alkalinity:	135	71	155	Hach	mf
Hardness:	123	78	245	Hach	mf
Total Ammonia:	0.0	0.0	7.4	Orion	mf

Ammonia Meter Slope: −57.2 Ammonia Blank: 0.0 Salinity 0.0

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



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

