

Bioassays of

Napoli's Trailer Park Wastewater Treatment Plant

Jacksonville, Duval County, Florida

NPDES #FL0043150

Sampled 11/2/98

February 1999

Biology Section

Division of Administrative & Technical Services

Comprehensive Quality Assurance Plan #870346G

Bioassays of

Napoli's Trailer Park Wastewater Treatment Plant

Jacksonville, Duval County, Florida

NPDES #FL0043150

Biology Section
Bureau of Laboratories
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Introduction

Napoli's Trailer Park WWTP, 10201 Normandy Blvd., Jacksonville, Duval County, Florida, NPDES #FL0043150, tests performed on 3 to 5 November, 1998.

Napoli's Trailer Park WWTP has a design flow of 0.015 MGD and a mean annual flow of 0.0137 MGD. Wastewater is treated by extended-aeration, chlorination for disinfection, and dechlorination with sodium sulfite prior to being discharged to a ditch that flows into an unnamed swamp (facility summary prepared by Kathleen Gerard, FDEP, Jacksonville).

The toxicity tests discussed in this report were performed in accordance with methods described by Weber, 1993, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, 4th Edition, EPA/600/4-90/027F.

Results and Discussion

The FDEP Biology Section performed two 48-hour static acute screening toxicity 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*. Test results did not show toxicity (Table 1).

Total residual chlorine was reported as 0.00 mg/L in the field and was <0.03 mg/L in the laboratory. Total ammonia was not detected in the sample. Further chemical analyses were performed on the sample and several metals were identified (Table 2).

Conclusion

The sample of effluent collected from this facility on November 2, 1998, did not show toxicity.

Table 1. Data recorded during the 48-hour acute screening bioassays of a sample of effluent from the Napoli's Trailer Park WWTP, Jacksonville, Duval County, Florida, NPDES# FL0043150, performed on 3 to 5 November, 1998.

Facility:	Napoli's Trailer Park		NPDES #	FL0043150	Facility Type: Wastewater
Location:	10201 Normandy Blvd., Jacksonville		Contact/District:	P. O'Conner/Northeast	Treatment Plant
County:	Duval		Test type:	static acute screen	
Sample Collection Date:	11/2/98	Time: 1135	# tests:	2	Receiving Water: Ditch to Unnamed Swamp
Test Beginning Date:	11/3/98	Time: 1530	Chlorination Type:	chlorinated	
Test Ending Date:	11/5/98	Time: 1345		Sample collected after dechlorination unit.	Page 1 of 1

Total Residual CL2	mg/L	Method
Field:	0.0	-
Lab:	<0.03	DR-100

Ammonia	Total (mg/L)	Unionized (mg/L)
Control Water (fish):	<0.017	<0.017
Control Water (20% DMW) (cladocerans):	<0.017	<0.017
100% Sample:	<0.017	<0.017

Alk & Hardness	Alkalinity (mg/L)	Hardness (mg/L)
Control Water (fish):	130	125
Control Water (20% DMW) (cladocerans):	84	90
100% Sample:	225	200

Salinity	(ppt)
Control Water (fish):	0
Control Water (20% DMW) (cladocerans):	0
100% Sample:	0

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

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature[A]			Dissolved Oxygen			Conductivity µmhos/cm	
Concentrations	Volume(mL)	0 hr	24 hr	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 A	0/20	5	5	5	8.2	-	8.0	24.3	-	23.7	7.8	-	8.3	170	215
Control B	0/20	5	5	5	-	-	8.1	-	-	23.7	-	-	8.3	-	200
Control C	0/20	5	5	5	-	-	8.2	-	-	23.8	-	-	8.3	-	210
Control D	0/20	5	5	4	-	-	8.2	-	-	23.7	-	-	8.3	-	220
100% A	20/0	5	5	5	8.0	-	8.6	24.7	-	23.7	7.3	-	8.3	850	885
100% B	20/0	5	5	5	-	-	8.6	-	-	23.7	-	-	8.3	-	970
100% C	20/0	5	5	5	-	-	8.6	-	-	23.7	-	-	8.3	-	1010
100% D	20/0	5	5	5	-	-	8.6	-	-	23.6	-	-	8.3	-	1100

[A] Temperature of test incubator #2 and the test room were continuously recorded on strip chart recorders.
Incubator #1 temperature range for the test period was 23.5-24.5°C.
Test room temperature range for the test period was 23.5-25.0°C.

Organism: ***Cyprinella leedsi*** Age: 12 days

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature[B]			Dissolved Oxygen			Conductivity µmhos/cm	
Concentrations	Volume(mL)	0 hr	24 hr	48 hr	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	24 hour	48 hour
Control A	0/500	5	5	5	7.8	8.4	8.3	25.0	24.0	23.7	7.8	7.9	8.3	240	285
Control B	0/500	5	5	5	7.8	8.5	8.3	24.5	23.9	23.8	7.9	7.9	8.3	255	275
Control C	0/500	5	5	5	7.8	8.5	8.3	24.2	23.6	23.6	7.8	8.0	8.4	250	270
Control D	0/500	5	5	5	7.8	8.5	8.4	24.0	23.8	23.8	7.8	8.0	8.3	260	300
100% A	500/0	5	5	5	7.7	8.6	8.5	24.6	23.7	23.7	6.7	7.9	8.1	885	1055
100% B	500/0	5	5	5	7.7	8.6	8.5	24.6	23.6	23.7	6.7	8.0	8.2	888	975
100% C	500/0	5	5	5	7.7	8.6	8.5	24.6	23.6	23.7	6.7	8.0	8.2	910	1050
100% D	500/0	5	5	5	7.7	8.6	8.5	24.6	23.7	23.5	6.7	8.0	8.2	940	1045

[B] Temperature of test incubator #3 and the test room were continuously recorded on strip chart recorders.
Incubator #3 temperature range for the test period was 23.6-25.5°C.
Test room temperature range for the test period was 23.5-25.0°C.

0 hour conductivity readings erroneously ommitted.

Table 2. Results of chemical analyses on the sample of effluent from the Napoli's Trailer Park WWTP sampled on November 2, 1998.

Metals

Cadmium	0.11	µg/L[I]
Calcium	64.9	mg/L
Copper	5.2	µg/L
Iron	16	µg/L[I]
Lead	0.12	µg/L[I]
Magnesium	10.7	mg/L
Zinc	35	µg/L

Base, Neutral, & Acid Extractable Organics

None Detected

Pesticides

None Detected

[I] Value reported is less than the minimum quantitation limit and greater than or equal to the minimum detection limit.

FDEP Biology Section — Acute Bioassay Bench Sheet

Sample Source: Napoli WWTP
County: Duval
Contact / District: P. O'Connor / Northeast
NPDES Permit #: FL0043150
LIMS Sample #: 354328 LIMS Job #: TLH-1998-11-03-16
sample log 11/9/98 ow
Test Type: (Screening) | Definitive
(Static) | Static Renewal | Flow-through
Test Number: 2 of 2
Room Temp Range 23.5°C - 25.0°C
Incubator # 2 Temp Range 23.5°C - 24.5°C

Sample Collection: Date 11/2/98 Time 11:35
Test Beginning: Date 11/3/98 Time 1530
Test Ending: Date 11/3/98 Time 13:45
Organism Batch #: 48 Diluent Batch #: 53
Organism Age: <24hrs SRT toxicant batch #: N/A
Test organism: Ceriodaphnia dubia

Remarks:
Sample aerated To 7.0 mg/L prior To loading test organisms
Initial DO. 2.5 mg/L

Conc.	Chamber #	Number Live			pH			Temperature (°C)			D.O. (mg/L)			UNCORRECTED Cond. (mmhos/cm) (Cond. (µmhos/cm))		
		0 hr	24 h	48 h	0 hr	24 h	48 h	0 hr	24 h	48 h	0 hr	24 h	48 h	0 hr	24 h	48 h
CTL A		5	5	5	8.2		8.0	24.3		23.7	7.8		8.3	170		215
CTL B		5	5	5			8.1			23.7			8.3			200
CTL C		5	5	5			8.2			23.8			8.3			210
CTL D		5	5	4*			8.2			23.7			8.3			220
100% A		5	5	5	8.0		8.6	24.3		23.7	7.3		8.3	850		885
100% B		5	5	5			8.6			23.7			8.3			970
100% C		5	5	5			8.6			23.7			8.3			1010
100% D		5	5	5			8.6			23.6			8.3			1100
measured by:		MF	DAW	FW	DAW		MF	DAW		MF	DAW		MF	DAW		FW
recorded by:		DAW	FW	FW	CH		MF	CH		MF	CH		MF	CH		FW

Investigators' Signatures

reviewer form updated 5/22/98

Water Quality Parameters	Salt Water Well Water	20% Min Water	Sample	Method	Measured by	Verified by
Field Total Residual Cl2 (mg/L):			0.0	–	P.O.	FW
Lab Total Residual Cl2 (mg/L):		<0.03	<0.03	DR-700	CH	FW
Alkalinity (mg/L as $CaCO_3$):		84	225	Hach	CH	FW
Hardness (mg/L as $CaCO_3$):		90	200	Hach	CH	FW
Total ammonia (mg/L as N):		<0.017	<0.017	ORION	FW	FW
Salinity:		0	0	YSI	FW	FW

FDEP Biology Section — Acute Bioassay Bench Sheet

Sample Source: Napoli WWTP
County: Duval
Contact / District: P. O'Connor / Northeast
NPDES Permit #: FL00 43150
LIMS Sample #: 354328 LIMS Job #: TLH-1998-11-03-16
sample log 11/9/98 DW
Test Type: Screening / Definitive
Static / Static Renewal / Flow-through
Test Number: 1 of 2

Sample Collection: Date 11/2/98 Time 11:35
Test Beginning: Date 11/3/98 Time 14:00
Test Ending: Date 11/5/98 Time 13:45
Organism Batch #: 84 Diluent Batch #: well water
Organism Age: 12 days SRT toxicant batch #: NA
Test organism: Cyprinella leedsi

Remarks: Room Temperature Range 23.5°C-25.0°C
Incubator #3 Temperature Range - 23.8°C-25.5°C

Conc.	Chamber #	Number Live 0 hr	Number Live 24 h	Number Live 48 h	pH 0 hr	pH 24 h	pH 48 h	Temperature (°C) 0 hr	Temperature (°C) 24 h	Temperature (°C) 48 h	D.O. (mg/L) 0 hr	D.O. (mg/L) 24 h	D.O. (mg/L) 48 h	UNCORRECTED Cond. (mmhos/cm) / Cond. (µmhos/cm) 0 hr	24 h	48 h
CTL A	G1	5	5	5	7.8	8.4	8.3	25.0	24.0	23.7	7.8	7.9	8.3	(B)	240	285
CTL B	G2	5	5	5	7.8	8.5	8.3	24.5	23.9	23.8	7.9	7.9	8.3		255	275
CTL C	G3	5	5	5	7.8	8.5	8.3	24.2	23.6	23.6	7.8	8.0	8.4		250	270
CTL D	G4	5	5	(M) 4 / 5	7.8	8.5	8.4	24.0	23.8	23.6	7.8	8.0	8.3		260	300
100% A	G5	5	5	5	7.7	8.6	8.5	24.6	23.7	23.7	6.7	7.9	8.1		885	1055
100% B	G6	5	5	5	7.7	8.6	8.5	24.6	23.6	23.7	6.7	8.0	8.2		775	975
100% C	G7	5	5	5	7.7	8.6	8.5	24.6	23.6	23.7	6.7	8.0	8.2		910	1050
100% D	G8	5	5	5	7.7	8.6	8.5	24.6	23.7	23.5	6.7	8.0	8.2		940	1045
													(B) mF FW			
measured by:		DW	CH	FW	DAW	CH	mF	DAW	CH	mF	DAW	CH	CH	1	CH	FW
recorded by:		DAW	CH	FW	CH	CH	FW	CH	CH	FW	CH	CH	CH		CH	FW

(D) Conductivity readings erroneously ommitted (FW) 11/4/98

(A) Count for Control D "C. dubia" written in space for "C. leedsi" by mistake. (FW) 11/5/98.
(B) wrong initials. (FW) 11/5/98

Investigators' Signatures

Water Quality Parameters

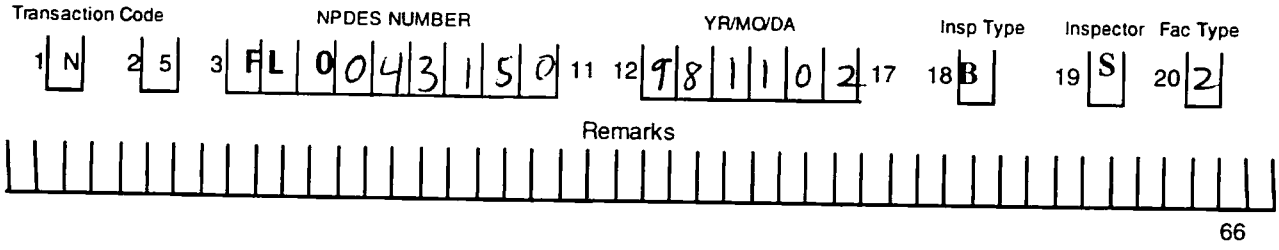
	Salt Water: Well Water	20% Min Water	Sample	Method	Measured by	Verified by
Field Total Residual Cl2 (mg/L):			0.0	—	P.O.	FW
Lab Total Residual Cl2 (mg/L):	<0.03		<0.03	DR-100	CH	FW
Alkalinity (mg/L as $CaCO_3$):	130	130	225	Hach	CH	FW
Hardness (mg/L as $CaCO_3$):	125	/	200	Hach	CH	FW
Total ammonia (mg/L as N):	<0.017		<0.017	ORion	FW	FW
Salinity:	0		0	YSI	FW	FW

reviewer

form updated 5/22/98

The Bioassay of the Napoli's Trailer Park WWTP effluent sampled on November 2, 1998, NPDES #FL0043150.

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



The Priority Pollutants Analysis for the Bioassay of the Napoli's Trailer Park WWTP effluent sampled on November 2, 1998, NPDES #FL0043150.

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

