

Bioassays of

Napoli's Trailer Park Wastewater Treatment Plant

Jacksonville, Duval County, Florida

NPDES #FL0043150

Sampled 5/6/96

July 1996

Biology Section

Division of Administrative and Technical Services

Comprehensive Quality Assurance Plan #870346G

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Bureau of Laboratories
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Introduction

Napoli's Trailer Park WWTP, 10201 Normandy Boulevard, Jacksonville, Duval County, Florida, NPDES # FL0043150, tests performed on 14 to 16 May, 1996.

This extended-aeration wastewater treatment plant has a design flow of 15 TGD and an annual average flow of 13 TGD. The treatment process includes aeration, clarification, chlorination, and dechlorination. Residuals are aerobically treated and land applied. Effluent is discharged to an unnamed ditch which leads to an unnamed marsh (facility summary provided 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 indicate toxicity (Table 1).

Total residual chlorine and total ammonia were not detected in the sample. Further chemical analyses were performed on the sample and several metals and the organic compound, 2,4,6-trichlorophenol, were identified (Table 2).

Conclusion

The sample of effluent collected from this facility on May 13, 1996, did not show toxicity.

Table 1. Data recorded during the 48-hour acute toxicity screening bioassays of a sample of effluent from Napoli Trailer Park, WWTP, Jacksonville, Duval County, Florida, NPDES# FL0043150, performed on 14 to 16 May, 1996.

Facility:	Napoli Trailer Park WWTP	NPDES #	FL0043150	Facility Type:	Domestic WWTP
Location:	10201 Normandy Blvd., Jacksonville	Contact/District:	T. McKelvey/Northeast		
County:	Duval	Test type:	static acute screen		
Sample Collection Date:	5/13/96 Time: 1100	# tests:	2	Receiving Water:	Unnamed ditch to an unnamed swamp.
Test Beginning Date:	5/14/96 Time: 1135	Chlorination Type:	Dechlorinated[A]		
Test Ending Date:	5/16/96 Time: 1150			Page 1 of 1	

[A] Dechlorinated in facility dechlorination unit

Total Residual CL2	mg/L	Method
Field:	not measured	
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	0.000

Alk & Hardness	Alkalinity (mg/L)	Hardness (mg/L)
Control Water (fish):	120	125
20% Dilute Mineral Water (cladocerans):	75	105
100% Sample:	200	200

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

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

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature[B]			Dissolved Oxygen			Conductivity Uncorrected 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	8.0	-	7.7[C]	24.2	-	24.4	8.2	-	8.0	205	235
Control B	0/20	5	5	5	-	-	8.3	-	-	24.4	-	-	7.9	-	230
Control C	0/20	5	5	5	-	-	8.3	-	-	24.4	-	-	7.9	-	230
Control D	0/20	5	5	5	-	-	8.3	-	-	24.5	-	-	7.9	-	235
100% A	20/0	5	5	5	7.8	-	8.7	24.6	-	24.4	5.8	-	7.9	650	680
100% B	20/0	5	5	5	-	-	8.7	-	-	24.4	-	-	7.9	-	695
100% C	20/0	5	5	5	-	-	8.7	-	-	24.4	-	-	7.9	-	715
100% D	20/0	5	5	5	-	-	8.7	-	-	24.4	-	-	7.9	-	720

[B] Temperature of test incubator was continously recorded on a strip chart recorder. Incubator temperature range for the test period was 24.4-25.0°C.

[C] The pH was checked twice. The cause of the lower pH was not determined.

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

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature[D]			Dissolved Oxygen			Conductivity Uncorrected 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	0/500	5	5	5	7.8	8.4	8.4	25.7	24.0	24.2	7.7	8.2	7.7	255	250
Control B	0/500	5	5	5	7.8	8.4	8.4	25.7	24.0	24.1	7.7	8.1	7.7	255	250
Control C	0/500	5	5	5	7.8	8.4	8.5	25.7	23.9	24.2	7.8	8.3	7.8	255	250
Control D	0/500	5	5	5	7.8	8.4	8.4	25.6	24.1	24.6	7.8	8.3	7.8	255	255
100% A	500/0	5	5	5	7.7	8.3	8.5	25.3	24.1	24.2	5.4	6.6	7.5	680	680
100% B	500/0	5	5	5	7.7	8.3	8.5	25.2	23.9	24.2	5.4	6.6	7.4	680	680
100% C	500/0	5	5	5	7.8	8.3	8.5	25.2	23.9	24.2	5.5	6.8	7.5	680	680
100% D	500/0	5	5	5	7.8	8.3	8.5	25.2	24.2	24.5	5.5	7.0	7.5	680	675

[D] Temperature of test room was continously recorded on a strip chart recorder. Room temperature range for the test period was 25.0-26.0°C.

Table 2. Results of chemical analyses on the effluent from the Napoli's Trailer Park WWTP sampled on May 13, 1996.

Metals

Cadmium	0.07	µg/L[I]
Calcium	58.9	mg/L[A]
Copper	7	µg/L[I]
Iron	39	µg/L[A]
Magnesium	10.7	mg/L[A]
Zinc	25	µg/L[A]

Pesticides and Herbicides

none detected

Base, Neutral, & Acid Extractable Organics

2,4,6-Trichlorophenol	0.38	µg/L[I]

[A] Value reported is the mean of two or more determinations.
[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 mobile Home Village
County: DUVAL
Contact / District: Tim McKelvey / NorthEast
NPDES Permit #: FL0043150
LIMS Sample #: 139337 LIMS Job #: 96MAY-14-05

Sample Collection: Date 5-13-96 Time 1100
Test Beginning: Date 5-14-96 Time 1135
Test Ending: Date 5-16-96 Time 1150
Organism Batch #: 2L Diluent Batch #: 22
Organism Age: 24 hours
Test Organism: Ceriodaphnia dubia

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

Instrument Calibrations:	pH	Temperature °C	D.O. mg/L	Conductivity µmhos/cm
meter #	7851	90H018262	90H018262	G9005749
0 hr	7.0@7.0 9.0@9.0	23.7 @ 23.8	8.2@25.3 °C	107.6@105.2 1030@1025@25.4°C
24 hr	7.0 @7.0 9.0@9.0	23.9 @24.0	8.3 @24.5 °C	108.2 @105.4 1037 @1025 @25.2 °C
48 hr	7.0 @7.0 9.0 @9.0	23.1 @23.2	8.3 @24.6 °C	108.8 @105.4 1048 @1025 @25.0 °C

Conc.	Chamber #	Number Live 0 hr	24 h	48 h	pH 0 hr	24 h	48 h	Temperature (°C) 0 hr	24 h	48 h	D.O. (mg/L) 0 hr	24 h	48 h	UNCORRECTED Cond. (mmhos/cm) Cond. (µmhos/cm) 0 hr	24 h	48 h
Control A	A	5	5	5	8.0		7.7*	24.7		24.4	8.7		8.0	205		235
Control B	B	5	5	5			8.3			24.4			7.9			230
Control C	C	5	5	5			8.3			24.4			7.9			230
Control D	D	5	5	5			8.3			24.5			7.9			235
100% A	A	5	5	5	7.8		8.7	24.6		24.4	5.8		7.9	650		680
100% B	B	5	5	5			8.7			24.4			7.9			695
100% C	C	5	5	5			8.7			24.4			7.9			715
100% D	D	5	5	5			8.7			24.4			7.9			720
							*pH checked 2X mf 5-16-96									
Measured/Loaded by:		MF	TM	TM	TM		TM	TM		TM	TM		TM	TM		TM
Recorded by:		TM	TM	MF	LM		ME	LM		MF	LM		MF	LM		MF

Investigators' Signatures
Marshall Faircloth
Tina M. Rudolph
Jonathan Smith
reviewer
form updated 5/05/95

Water Quality Parameters	Salt Water / Well Water	20% Min Water	Sample	Method	Measured by
Field Total Residual Cl2 (mg/L):			not measured		
Lab Total Residual Cl2 (mg/L):	—	—	<0.03	DR-100	TM
Alkalinity (mg/L as $CaCO_3$):	—	75	200	Hach	LM
Hardness (mg/L as $CaCO_3$):	—	105	200	Hach	LM
Total ammonia (mg/L as N):	—	<0.017	<0.017	Orion	JN

Ammonia Meter #98136 Ammonia Meter Slope: -57.9 Ammonia Blank: <0.017 Control Salinity: 0 ppt Sample Salinity: 0 ppt

FDEP Biology Section — Acute Bioassay Bench Sheet

Sample Source: Napoli Mobile Home Village
County: Duval
Contact / District: Tim McKelvey / Northeast
NPDES Permit #: FL00 43150
LIMS Sample #: 139337 LIMS Job #: 96-MM4-14-05

Sample Collection: Date 5-13-96 Time 1100
Test Beginning: Date 5-14-96 Time 1150
Test Ending: Date 5-16-96 Time 1150
Organism Batch #: 34 Diluent Batch #: well
Organism Age: 12 days old
Test Organism: Cyprinella leedsi

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

Test Number: 2 of 2

Remarks:

Instrument Calibrations:	pH	Temperature °C	D.O. mg/L	Conductivity µmhos/cm
	meter # 7851	90H018262	90H018262	G9005749
0 hr	7.0 @ 7.0 9.0 @ 9.0	23.7 @ 23.8	8.2 @ 25.3 °C	107.6 @ 105.2 1030 @ 1025 @ 25.4 °C
24 hr	7.0 @ 7.0 9.0 @ 9.0	23.9 @ 24.0	8.3 @ 24.5 °C	108.2 @ 105.4 1037 @ 1025 @ 25.2 °C
48 hr	7.0 @ 7.0 9.0 @ 9.0	23.1 @ 23.2	8.3 @ 24.6 °C	108.8 @ 105.4 1048 @ 1025 @ 25.0 °C

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
Control A	380	5	5	5	7.8	8.4	8.4	25.7	24.0	24.2	7.7	8.2	7.7	255	250	250
Control B	48	5	5	5	7.8	8.4	8.4	25.7	24.0	24.1	7.7	8.1	7.7	255	250	250
Control C	58	5	5	5	7.8	8.4	8.5	25.7	23.9	24.2	7.8	8.3	7.8	255	250	250
Control D	11	5	5	5	7.8	8.4	8.4	25.6	24.1	24.6	7.8	8.3	7.8	255	250	255
100% A	307	5	5	5	7.7	8.3	8.5	25.3	24.1	24.2	5.4	6.6	7.5	680	670	680
100% B	306	5	5	5	7.7	8.3	8.5	25.2	23.9	24.2	5.4	6.6	7.4	680	670	680
100% C	118	5	5	5	7.8	8.3	8.5	25.2	23.9	24.2	5.5	6.8	7.5	680	670	680
100% D	174	5	5	5	7.8	8.3	8.5	25.2	24.2	24.5	5.5	7.0	7.5	680	670	675
Measured/Loaded by:		TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM
Recorded by:		TM	TM	MF	LM	JN	MF	LM	JN	MF	LM	JN	MF	LM	JN	MF

* 8.3 entry error JN 5.15.96

* 5.14.96 A entry error 25.2 LM

Investigators' Signatures

Marshall Fairley

Tim McKelvey

Jennifer Nath

reviewer

form updated 5/05/95

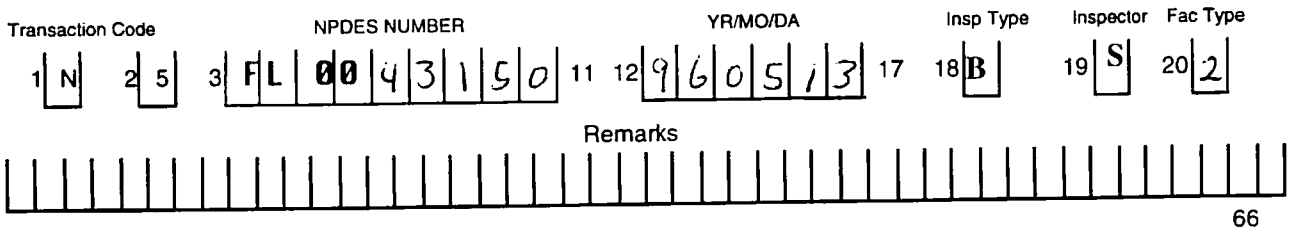
Water Quality Parameters	Salt Water (Well Water)	20% Min Water	Sample	Method	Measured by
Field Total Residual Cl2 (mg/L):			NC + MEPS 5-14-96		
Lab Total Residual Cl2 (mg/L):	—	—	<0.03	DR-100	TM
Alkalinity (mg/L as $CaCO_3$)	120	—	200	Hach	LM
Hardness (mg/L as $CaCO_3$)	~~126~~ 125	—	200	Hach	LM
Total ammonia (mg/L as N)	<0.017	—	<0.017	Orion	JN

Ammonia Meter #96136 Ammonia Meter Slope: -57.9 Ammonia Blank: <0.017 Control Salinity: 0 ppt Sample Salinity: 0 ppt

B* wrote incorrect #, Initialed, LM

The Bioassay of the Napoli's Trailer Park WWTP effluent sampled on May 13, 1996, 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 May 13, 1996, NPDES #FL0043150.

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

