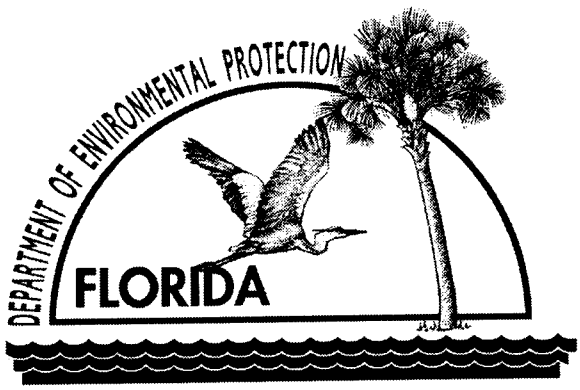


Bioassays of the Town of

Davie System #2 Wastewater Treatment Plant

Davie, Broward County, Florida

NPDES #FL0040541

Sampled 9/25/95

December 1995

Biology Section

Division of Administrative and Technical Services

Comprehensive Quality Assurance Plan #870346G

Bioassays of the Town of

Davie System #2 Wastewater Treatment Plant

Davie, Broward County, Florida

NPDES #FL0040541

Biology Section
Bureau of Laboratories
December 1995

Introduction

Town of Davie System #2 WWTP, Davie, Broward County, Florida, NPDES #FL0040541, tests performed on 26 to 28 September, 1995.

This wastewater treatment plant is located at 3591 NW 76th Avenue in Davie. The facility has a permitted capacity of 3.0 MGD and a monthly average flow of 2.6 MGD. The wastewater treatment facility consists of two package wastewater treatment plants (activated sludge) operated in the contact stabilization mode. Each plant includes one contact basin, clarifier, re-aeration basin, chlorine contact chamber, and digester. Initial chlorination at each plant, a low dosage for the control of algae, occurs at the weirs. Effluent from each plant is combined, disinfected with chlorine, and then routed to two effluent holding basins and then to the effluent pump station. Effluent is discharged to the City of Hollywood wet well with an outfall to the Atlantic Ocean (facility summary provided by Ginny Powell, FDEP, SE office).

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 combined chlorinated effluent from this facility. Two additional 48-hour screening bioassays were performed on aliquots of the sample that were dechlorinated in the laboratory with 0.025N sodium thiosulfate at the rate of 2.25 mL/L. The test species used for these bioassays were the water flea, *Ceriodaphnia dubia*, and the bannerfin shiner, *Cyprinella leedsi*.

The chlorinated test results showed the sample to be acutely toxic to both test species, producing 100% mortality in 24 hours (Table 1). However, no mortality occurred in either of the dechlorinated sample tests.

Total residual chlorine of the sample was not measured in the field, but was 0.8 mg/L in the laboratory. Total residual chlorine levels as low as 0.028 mg/L have been found to be acutely toxic to some freshwater fish and invertebrates (EPA *Quality Criteria for Water*, 1986). Total ammonia and unionized ammonia concentrations were 1.19 mg/L and 0.008 mg/L, respectively. 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 September 25, 1995, showed toxicity in the chlorinated sample, but did not show toxicity in the aliquot of sample which was dechlorinated in the laboratory. We attribute the toxicity to the total residual chlorine content of the sample.

Table 1. Data recorded during the 48-hour acute screening bioassays of a sample of effluent from the Town of Davie System #2 WWTP, Davie, Broward County, Florida, NPDES# FL0040541, performed on 26 to 28 September, 1995.

Dechlorinated Test

Facility:	**Town of Davie System #2 WWTP**	**NPDES #**	**FL0040541**	Facility Type:	**Sewage Treatment Plant**
Location:	Davie	Contact/District:	G. Powell/Southeast		
County:	Broward	Test type:	static acute screen		
Sample Collection Date:	**9/25/95** Time: 1250	# tests:	2	Receiving Water:	Atlantic Ocean
Test Beginning Date:	9/26/95 Time: 1430	Chlorination Type:	**Chlorinated***		
Test Ending Date:	9/28/95 Time: 1430				

*Sample was dechlorinated in the laboratory with 2.25 mL/L of 0.025 N sodium thiosulfate.

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

Concentrations	Sample/Diluent Volume(mL)	SURVIVAL # Alive 0 hr	24 hr	48 hr	pH 0 hour	24 hour	48 hour	Temperature[A] 0 hour	24 hour	48 hour	Dissolved Oxygen 0 hour	24 hour	48 hour	Conductivity Uncorrected µmhos/cm 0 hour	48 hour
Control A	0/20	5	5	5	8.1	-	8.2	23.6	-	24.3	7.8	-	7.8	200	190
Control B	0/20	5	5	5	-	-	8.1	-	-	24.3	-	-	7.6	-	200
Control C	0/20	5	5	5	-	-	8.2	-	-	24.3	-	-	7.6	-	190
Control D	0/20	5	5	5	-	-	8.2	-	-	24.2	-	-	7.6	-	200
100% A	20/0	5	5	5	7.2	-	8.2	23.4	-	24.2	7.6	-	7.8	550	615
100% B	20/0	5	5	5	-	-	8.2	-	-	24.3	-	-	7.7	-	610
100% C	20/0	5	5	5	-	-	8.2	-	-	24.3	-	-	7.8	-	620
100% D	20/0	5	5	5	-	-	8.2	-	-	24.0	-	-	7.7	-	620

[A] Temperature of test incubator was continously recorded on a strip chart recorder.
Incubator temperature range for the test period was 23.9-24.4°C.

Organism: ***Cyprinella leedsi*** Age: 11 days

Concentrations	Sample/Diluent Volume(mL)	SURVIVAL # Alive 0 hr	24 hr	48 hr	pH 0 hour	24 hour	48 hour	Temperature[B] 0 hour	24 hour	48 hour	Dissolved Oxygen 0 hour	24 hour	48 hour	Conductivity Uncorrected µmhos/cm 0 hour	48 hour
Control A	0/500	5	5	5	7.9	8.2	8.3	24.4	23.8	24.0	7.4	7.6	7.7	250	250
Control B	0/500	5	5	5	7.9	8.2	8.3	24.4	23.8	24.0	7.4	7.6	7.8	250	245
Control C	0/500	5	5	5	7.9	8.2	8.3	24.4	23.8	23.8	7.4	7.7	7.8	250	245
Control D	0/500	5	5	5	7.9	8.2	8.3	24.4	23.8	23.8	7.4	7.7	7.8	250	245
100% A	500/0	5	5	5	7.3	7.7	8.0	22.8	23.8	24.0	7.7	7.8	7.8	580	600
100% B	500/0	5	5	5	7.2	7.7	7.9	22.5	23.9	24.0	7.7	7.7	7.7	580	600
100% C	500/0	5	5	5	7.2	7.7	7.9	22.5	23.8	23.9	7.9	7.8	7.7	580	600
100% D	500/0	5	5	5	7.2	7.6	7.9	22.9	23.8	23.9	8.0	7.8	7.7	585	600

[B] Temperature of test room was continously recorded on a strip chart recorder.
Room temperature range for the test period was 23-24.5°C.

Total Residual CL2	mg/L	Method
Field:	not measured	
Lab:	0.04	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:	1.19	0.008

Alk & Hardness	Alkalinity (mg/L)	Hardness (mg/L)
Control Water (fish):	120	130
20% Dilute Mineral Water (cladocerans):	75	80
100% Sample:	80	140

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

Table 1. Continued. Data recorded during the 48-hour acute screening bioassays of a sample of effluent from the Town of Davie System #2 WWTP, Davie, Broward County, Florida, NPDES# FL0040541, performed on 26 to 27 September, 1995.

Chlorinated Test

Facility:	**Town of Davie System #2 WWTP**		**NPDES #**	**FL0040541**	Facility Type: **Sewage Treatment Plant**
Location:	Davie		Contact/District:	G. Powell/Southeast	
County:	Broward		Test type:	static acute screen	
Sample Collection Date:	**9/25/95**	Time: 1250	# tests:	2	Receiving Water: Atlantic Ocean
Test Beginning Date:	9/26/95	Time: 1430	Chlorination Type:	**Chlorinated**	
Test Ending Date:	9/27/95	Time: 1430			**Page 2 of 2**

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

Concentrations	Sample/Diluent Volume(mL)	SURVIVAL # Alive 0 hr	24 hr	48 hr	pH 0 hour	24 hour	48 hour	Temperature[A] 0 hour	24 hour	48 hour	Dissolved Oxygen 0 hour	24 hour	48 hour	Conductivity Uncorrected µmhos/cm 0 hour	24 hour
Control A	0/20	5	5	-	8.1	8.2	-	23.7	24.3	-	7.7	7.8	-	180	190
Control B	0/20	5	5	-	-	8.3	-	-	24.3	-	-	7.8	-	-	190
Control C	0/20	5	5	-	-	8.3	-	-	24.3	-	-	7.8	-	-	190
Control D	0/20	5	5	-	-	8.3	-	-	24.3	-	-	7.8	-	-	190
100% A	20/0	5	0	-	6.9	8.2	-	23.5	24.3	-	7.6	7.8	-	555	585
100% B	20/0	5	0	-	-	8.3	-	-	24.2	-	-	7.8	-	-	600
100% C	20/0	5	0	-	-	8.3	-	-	24.2	-	-	7.9	-	-	600
100% D	20/0	5	0	-	-	8.3	-	-	24.1	-	-	7.9	-	-	600

[A] Temperature of test incubator was continously recorded on a strip chart recorder.
Incubator temperature range for the test period was 23.9-24.4°C.

Organism: ***Cyprinella leedsi*** Age: 11 days

Concentrations	Sample/Diluent Volume(mL)	SURVIVAL # Alive 0 hr	24 hr	48 hr	pH 0 hour	24 hour	48 hour	Temperature[B] 0 hour	24 hour	48 hour	Dissolved Oxygen 0 hour	24 hour	48 hour	Conductivity Uncorrected µmhos/cm 0 hour	24 hour
Control A	0/500	5	5	-	8.0	8.3	-	23.8	24.0	-	7.9	7.7	-	245	245
Control B	0/500	5	5	-	8.0	8.2	-	23.8	23.9	-	7.8	7.7	-	245	245
Control C	0/500	5	5	-	8.0	8.3	-	23.8	23.9	-	7.8	7.8	-	245	245
Control D	0/500	5	5	-	8.0	8.3	-	23.9	23.8	-	7.8	7.8	-	245	245
100% A	500/0	5	0	-	7.1	7.6	-	24.4	24.0	-	7.7	7.9	-	600	595
100% B	500/0	5	0	-	7.0	7.5	-	24.5	24.1	-	7.6	7.8	-	600	595
100% C	500/0	5	0	-	7.0	7.5	-	24.5	24.1	-	7.6	7.9	-	600	595
100% D	500/0	5	0	-	7.0	7.5	-	24.5	24.0	-	7.5	7.9	-	600	595

[B] Temperature of test room was continously recorded on a strip chart recorder.
Room temperature range for the test period was 23-24.5°C.

Total Residual CL2	mg/L	Method
Field:	not measured	
Lab:	0.80	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:	1.19	0.008

Alk & Hardness	Alkalinity (mg/L)	Hardness (mg/L)
Control Water (fish):	120	130
20% Dilute Mineral Water (cladocerans):	75	80
100% Sample:	80	155

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

Table 2. Results of chemical analyses on the effluent from the Town of Davie System #2 Wastewater Treatment Plant sampled on September 25, 1995.

Metals

Calcium	47.0	mg/L
Cadmium	7	µg/L[I]
Chloride	87.0	mg/L[A]
Copper	7	µg/L[I]
Iron	249	µg/L
Magnesium	4.90	mg/L
Nickel	9	µg/L[I]
Silver	0.53	µg/L
Zinc	48	µg/L

Pesticides and Herbicides

none detected

Base, Neutral, & Acid Extractable Organics

none detected

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: Town of Davie
County: ~~Manatee~~ mfg 9/29/95 Broward county
Contact / District: T Davis / Southeast
NPDES Permit #: FL0040541
LIMS Sample #: 118057 **LIMS Job #:** 95-SEP-26-05
sample log 10/6/95

Sample Collection: Date 9-25-95 Time 1250
Test Beginning: Date 9-26-95 Time 1430
Test Ending: Date 9-29-95 Time 1430
Organism Batch #: 45 **Diluent Batch #:** 39
Organism Age: < 24 hours
Test Organism: Ceriodaphnia dubia

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

Test Number: 1 of 4

Remarks: Dechlorinated sample
2.25 ml of 0.025N sodium thiosulfate added per liter of sample - Final reading 0.04 mg/L Cl.

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	23.2 @ 23.2	8.2 @ 24.3 °C	109.1 @ 102.3 993 @ 1013 @ 23.9 °C
24 hr	7.0 @ 7.0 9.0 @ 9.0	23.5 @ 23.5	8.3 @ 24.7 °C	107.9 @ 102.3 978 @ 1013 @ 24.1 °C 1004 @ 1032
48 hr	7.0 @ 7.0 9.0 @ 9.0	23.7 @ 23.7	8.4 @ 24.2 °C	1094 @ 102.3 996 @ 1013 @ 24.0 °C

		Number Live			pH			Temperature (°C)			D.O. (mg/L)			UNCORRECTED Cond. (mmhos/cm) (Cond. (µmhos/cm)		
Conc.	Chamber #	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	5	5	5	8.1		8.2	23.6		24.3	7.8		7.8	200		190
Control	B	5	5	5			8.1			24.3			7.6			200
Control	C	5	5	5			8.2			24.3			7.6			190
Control	D	5	5	5			8.2			24.2			7.6			200
100 %	A	5	5	5	7.2		8.2	23.4		24.2	7.6		7.8	550		615
100 %	B	5	5	5			8.2			24.3			7.7			610
100 %	C	5	5	5			8.2			24.3			7.8			620
100 %	D	5	5	5			8.2			24.0			7.7			620
Measured/Loaded by:		MF	MF	MF	LM		JN	LM		JN	LM		JN	LM		JN
Recorded by:		MF	MF	MF	JN		TR	JN		TR	JN		TR	JN		TR

Investigators' Signatures

Marshall Faircloth
Jon Mirth
Ty Monard
Jennifer Sparagana
Gina Mikulski
Teresa Corbett
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):			—	—	—
Lab Total Residual Cl2 (mg/L):	—	< 0.03	0.04	DR100	TM
Alkalinity (mg/L as $CaCO_3$):	—	75	80	hach	LM
Hardness (mg/L as $CaCO_3$):	—	80	140	hach	LM
Total ammonia (mg/L as N):	—	< 0.017	1.19	Orion	JN

Ammonia Meter #98136 Ammonia Meter Slope: -58.7 Ammonia Blank: < 0.017 Control Salinity: 0 ppt Sample Salinity: 0 ppt

FDEP Biology Section — Acute Bioassay Bench Sheet

Sample Source: Town of Davie

County: ~~Manatee~~ mr 9/26/95 wrong county Broward

Contact / District: T Davis / Southeast

NPDES Permit #: FL0040541

LIMS Sample #: 118057 LIMS Job #: 95-SEP-26-05

sample log 10/6/95

Test Type: (Screening) Definitive

(Static) Static Renewal | Flow-through

Test Number: 2 of 4

Remarks: Dechlorinated Sample

2.25 ml of 0.025 N Sodium thiosulfate added per liter of sample, final chlorine reading of 0.04 mg/L.

Sample Collection: Date 9-25-95 Time 1250

Test Beginning: Date 9-26-95 Time 1430

Test Ending: Date 9-28-95 Time 1430

Organism Batch #: 44 Diluent Batch #: well

Organism Age: 11 days

Test Organism: Cyprinella leedsi

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	23.2 @ 23.2	8.2 @ 24.8 °C	109.1 @ 102.3 993 @ 1013 @ 23.9 °C
24 hr	7.0 @ 7.0 9.0 @ 9.0	23.5 @ 23.5	8.3 @ 24.7 °C	107.9 @ 102.3 978 @ 1013 @ 24.1 °C
48 hr	7.0 @ 7.0 9.0 @ 9.0	23.7 @ 23.7	8.4 @ 24.2 °C	109.4 @ 102.3 996 @ 1013 @ 24.0 °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	630	5	5	5	7.9	8.2	8.3	24.4	23.8	24.0	7.4	7.6	7.7	250	250	250
Control B	82	5	5	5	7.9	8.2	8.3	24.4	23.8	24.0	7.4	7.6	7.8	250	245	245
Control C	520	5	5	5	7.9	8.2	8.3	24.4	23.8	23.8	7.4	7.7	7.8	250	245	245
Control D	25	5	5	5	7.9	8.2	8.3	24.4	23.8	23.8	7.4	7.7	7.8	250	250	245
100% A	22	5	5	5	7.3	7.7	8.0	22.8	23.8	24.0	7.7	7.8	7.8	580	595	600
100% B	18	5	5	5	7.2	7.7	7.9	22.5	23.9	24.0	7.7	7.7	7.7	580	595	600
100% C	308	5	5	5	7.2	7.6	7.9	22.5	23.8	23.9	7.9	7.8	7.7	580	595	600
100% D	307	5	5	5	7.2	7.6	7.9	22.9	23.8	23.9	8.0	7.8	7.7	585	595	600
Measured/Loaded by:		MF	MF	MF	MM	JLS	JN	MM	JLS	JN	MM	JLS	JN	MM	JLS	JN
Recorded by:		MF	MF	MF	JN	JN	TR	JN	JN	TR	JN	JN	TR	JN	JN	TR

Investigators' Signatures

Marshall Faircloth

Jennifer Spangler

Tobin C. Roton

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):			—	—	—
Lab Total Residual Cl2 (mg/L):	<0.03	—	0.04	DR 100	TM
Alkalinity (mg/L as $CaCO_3$):	120	—	80	hach	CM
Hardness (mg/L as $CaCO_3$):	130	—	140	hach	CM
Total ammonia (mg/L as N):	<0.017	—	1.19	Orion	JN

Ammonia Meter #98136 Ammonia Meter Slope: -58.7 Ammonia Blank: <0.017 Control Salinity: 0 ppt Sample Salinity: 0 ppt

FDEP Biology Section — Acute Bioassay Bench Sheet

Sample Source: Town of Davie
County: ~~Monroe~~ mf 9/26/95 wrong county Broward
Contact / District: T Davis / Southeast
NPDES Permit #: FL0040541
LIMS Sample #: 118057 LIMS Job #: 95-SEP-2605

Sample Collection: Date 9-25-95 Time 1250
Test Beginning: Date 9-26-95 Time 1430
Test Ending: Date 9-27-95 Time 1430
Organism Batch #: 45 Diluent Batch #: 39
Organism Age: < 24 hours
Test Organism: Ceriodaphnia dubia

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

Test Number: 3 of 4

Remarks: Chlorinated Sample

Test Ended 24 hrs

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	23.2 @ 23.2	8.2 @ 24.8 °C	109.1 @ 102.3 993 @ 1013 @ 23.9 °C
24 hr	7.0 @ 7.0 9.0 @ 9.0	23.5 @ 23.5	8.3 @ 24.7 °C	107.9 @ 102.3 978 @ 1013 @ 24.1 °C
48 hr	7.0 @ 7.0 9.0 @ 9.0	23.7 @ 23.7	8.4 @ 24.2 °C	109.4 @ 102.3 996 @ 1013 @ 24.0 °C

		Number Live			pH			Temperature (°C)			D.O. (mg/L)			UNCORRECTED Cond. (mmhos/cm) Cond. (µmhos/cm)		
Conc.	Chamber #	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	5	5		8.1	8.2	~~7.7~~	23.7	24.3		7.7	7.8		180	190	
Control	B	5	5			8.3	~~8.2~~		24.3			7.8			190	
Control	C	5	5			8.3			24.3			7.8			190	
Control	D	5	5			8.3			24.3			7.8			190	
100%	A	5	0		6.9	8.2		23.5	24.3		7.6	7.8		555	585	
100%	B	5	0			8.3			24.2			7.8			600	
100%	C	5	0			8.3			24.2			7.9			600	
100%	D	5	0			8.3			24.1			7.9			600	
Measured/Loaded by:		MF	MF		JM	JLS	JN	LM	JLS		LM	JLS		LM	JLS	
Recorded by:		JN	MF		JN	JN	TR	JN	JN		JN	JN		JN	JN	

Investigators' Signatures

Marshall Faircloth
Joseph Smith
Jennifer Sparrow
Tina M. Nichols
Tobin C. Reed
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):			—	—	—
Lab Total Residual Cl2 (mg/L):	—	20.03	~~0.1~~ 0.08	DR-100	TM
Alkalinity (mg/L as $CaCO_3$):	—	75	80	hach	LM
Hardness (mg/L as $CaCO_3$):	—	80	155	hach	LM
Total ammonia (mg/L as N):	—	<0.017	1.19	Orion	JN

Ammonia Meter #98136 Ammonia Meter Slope: -58.7 Ammonia Blank: 20.017 Control Salinity: 0 ppt Sample Salinity: 0 ppt

* wrong species ID'd as LM

FDEP Biology Section — Acute Bioassay Bench Sheet

Sample Source: Town of Davie
County: ~~Monroe~~ MF 9/26/95 wrong county Broward
Contact / District: T. Davis / Southeast
NPDES Permit #: FL0040541
LIMS Sample #: 118057 **LIMS Job #:** 95-SEP-26-05

Sample Collection: Date 9-25-95 Time 1250
Test Beginning: Date 9-26-95 Time 1430
Test Ending: Date 9-27-95 Time 1430
Organism Batch #: 44 **Diluent Batch #:** well
Organism Age: 11 days
Test Organism: Cyprinella leedsi

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

Test Number: 4 of 4

Remarks: Chlorinated Sample
Test terminated @ 24 hrs.

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	23.2 @ 23.2	8.2 @ 24.8 °C	1091 @ 102.3 993 @ 1013 @ 23.9 °C
24 hr	7.0 @ 7.0 9.0 @ 9.0	23.5 @ 23.5	8.3 @ 24.7 °C	1079 @ 1023 978 @ 1013 @ 24.1 °C
48 hr	7.0 @ 7.0 9.0 @ 9.0	23.7 @ 23.7	8.4 @ 24.2 °C	1094 @ 1023 996 @ 1013 @ 24.0 °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
Control A	348	5	5		8.0	8.3		23.8	24.0		7.9	7.7		245	245	
Control B	350	5	5		8.0	8.2		23.8	23.9		7.8	7.7		245	245	
Control C	2190	5	5		8.0	8.3		23.8	23.9		7.8	7.8		245	245	
Control D	41	5	5		8.0	8.3		23.9	23.8		7.8	7.8		245	245	
100% A	85	5	0		7.1	7.6		24.4	24.0		7.7	7.9		600	595	
100% B	503	5	0		7.0	7.5		24.5	24.1		7.6	7.8		600	595	
100% C	506	5	0		7.0	7.5		24.5	24.1		7.6	7.9		600	595	
100% D	476	5	0		7.0	7.5		24.5	24.0		7.5	7.9		600	595	
Measured/Loaded by:		MF	MF		MM	JLS		MM	JLS		MM	JLS		MM	JLS	
Recorded by:		MF	MF		JN	JN		JN	JN		JN	JN		JN	JN	

Investigators' Signatures

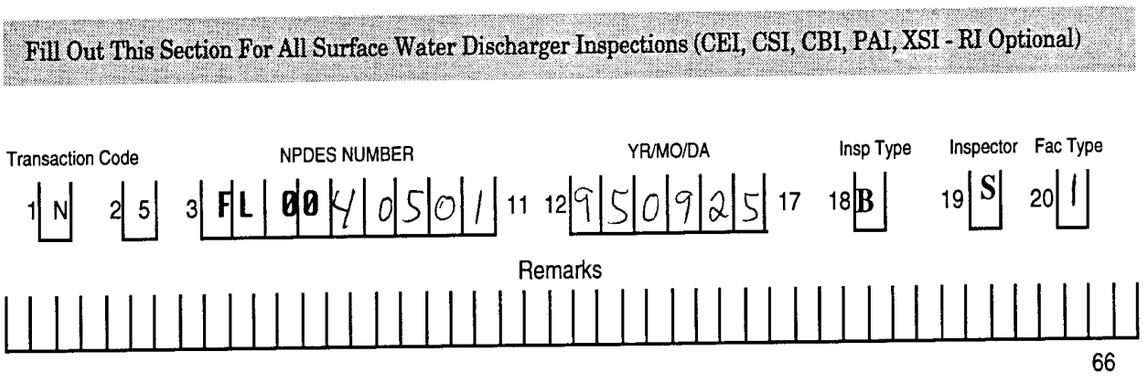
Marshall Faircloth
[illegible]
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Robin C. Rader
[illegible]
reviewer

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):			—	—	—
Lab Total Residual Cl2 (mg/L):	<0.03	—	0.8	DR-100	TM
Alkalinity (mg/L as $CaCO_3$):	120	—	80	Hach	LM
Hardness (mg/L as $CaCO_3$):	130	—	155	Hach	LM
Total ammonia (mg/L as N):	<0.017	—	1.19	ORION	JN

Ammonia Meter #98136 Ammonia Meter Slope: -58.7 Ammonia Blank: <0.017 Control Salinity: 0 ppt Sample Salinity: 0 ppt

The Bioassay of the Town of Davie System #2 WWTP effluent sampled on September 25, 1995, NPDES #FL0040501.



The Priority Pollutants Analysis for the Bioassay of the Town of Davie System #2 WWTP effluent sampled on September 25, 1995, NPDES # FL0040501.

