

Bioassays of

Justiss Mobile Home Park
Wastewater Treatment Plant

Jacksonville, Duval County, Florida

NPDES #FL0024279

Sampled 10/29/01

May 2002

Biology Section
Division of Resource Assessment & Management

Comprehensive Quality Assurance Plan #870346G

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Biology Section
Bureau of Laboratories
May 2002

Introduction

Justiss Mobile Home Park Wastewater Treatment Plant, 4637 Alden Street, Jacksonville, Duval County, Florida, NPDES #FL0024279, tests performed on 30 October to 1 November 2001.

This wastewater treatment plant has a design flow of 0.015 MGD and an average flow of 0.010 MGD. The wastewater treatment system consists of an influent pump station, three concrete aeration basins, a single concrete clarifier with twin hoppers, a chlorine contact chamber, and a concrete aerated digester. The effluent is dechlorinated using sulfur dioxide gas before being discharged into the Class III fresh waters of the Ortega River. Due to problems with the effluent line, the facility is currently discharging to a ditch along Blane Road.

An Administrative Order was issued by the FDEP to this facility on September 24, 2001, for violations of unionized ammonia and dissolved oxygen. The Administrative Order is still open. A Court order was issued November 16, 2001, requiring the facility to take the following actions: repair several physical damages to the treatment system, make design modifications to allow proper operation and maintenance of the system, remove any solids from the current discharge ditch, redirect the effluent to the permitted outfall, and submit a request to the Jacksonville Electric Authority to connect Justiss MHP to the regional sewer system (facility summary provided by Brain Kelsay, 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 collected in the plant after dechlorination from this facility. The test species used for these bioassays were the water flea, *Ceriodaphnia dubia*, and the bannerfin shiner, *Cyprinella leedsi*. The test results did not indicate toxicity to either test species within 48 hours (Table 1).

Total residual chlorine and total ammonia were not detected in the bioassay sample in the laboratory. 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 October 29, 2001, did not show acute toxicity to the either test species within 48 hours.

Table 1. Data recorded during the 48-hour acute screening bioassays of a sample of effluent from the Justiss Mobile Home Park Wastewater Treatment Plant, 4637 Alden Street, Jacksonville, Duval County, Florida, NPDES# FL0024279 performed on 30 October to 1 November 2001.

Facility:	**Justiss Mobile Home Park WWTP**		**NPDES #**	**FL0024279**	Facility Type: **Wastewater**	**Analysts:**	Della Parker-Hanson
Location:	4637 Alden Street		Contact/District:	Tom Kallenmen/Northeast	**Treatment Plant**		Marshall Faircloth
County:	Duval		Test type:	static acute screen			Joshua Ayres
Sample Collection Date:	10/29/01	Time: 0920	# tests:	2	Receiving Water: Ortega River		
Test Beginning Date:	10/30/01	Time: 1330	Chlorination Type:	Chlorinated			
Test Ending Date:	11/1/01	Time: 1450		sample collected after dechlorination	**Page 1 of 1**	**Reviewer:**	David Whiting

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

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature[A]			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	8.3	-	8.4	24.2	-	23.5	7.2	-	8.3	170	215
Control B	0/20	5	5	5	-	-	8.4	-	-	23.5	-	-	8.3	-	215
Control C	0/20	5	5	5	-	-	8.4	-	-	23.5	-	-	8.4	-	215
Control D	0/20	5	5	5	-	-	8.4	-	-	23.2	-	-	8.5		240
100% A	20/0	5	5	5	7.8	-	8.6	24.5	-	23.9	7.0	-	8.4	470	535
100% B	20/0	5	5	5	-	-	8.6	-	-	24.0	-	-	8.4	-	545
100% C	20/0	5	5	5	-	-	8.6	-	-	24.0	-	-	8.3	-	580
100% D	20/0	5	5	5	-	-	8.6	-	-	23.9	-	-	8.3	-	600

[A] Temperatures of room and test incubator were continuously recorded on a strip chart recorder.
Room Temperature range for the test period was 24.0-26.0°C.
Incubator #2 temperature range for the test period was 26.0-27.0°C.

Organism: ***Cyprinella leedsi*** Life stage: 10 days

	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	0/500	5	5	5	8.0	8.5	8.6	23.9	25.1	24.9	7.0	7.4	7.7	255	290
Control B	0/500	5	5	5	8.0	8.5	8.6	23.6	25.2	24.8	7.0	7.4	7.7	260	300
Control C	0/500	5	5	5	8.0	8.5	8.6	23.5	25.3	24.6	7.0	7.4	7.7	260	290
Control D	0/500	5	5	5	8.0	8.5	8.5	23.4	24.9	24.6	7.0	7.4	7.7	260	290
100% A	500/0	5	5	5	7.8	8.3	8.4	23.5	25.4	24.6	6.6	7.2	7.7	505	555
100% B	500/0	5	5	5	7.8	8.3	8.4	23.5	25.4	24.6	6.5	7.1	7.7	515	560
100% C	500/0	5	5	5	7.8	8.3	8.4	23.4	25.3	24.6	6.5	7.3	7.6	515	595
100% D	500/0	5	5	5	7.8	8.3	8.4	23.3	25.1	24.4	6.5	7.2	7.7	515	570

[B] Temperatures of room and test incubator were continuously recorded on a strip chart recorder.
Room Temperature range for the test period was 24.0-26.0°C.
Incubator #3 temperature range for the test period was 24.0-25.0°C.

Data Transcription Verification	
date:	1/10/02
by:	Della Parker-Hanson
	Cathy Oaks

Lims	
Job number:	TLH-2001-10-30-03
Sample number:	557526

Total Residual CL2	mg/L	Method
Field:	0.18	-
Lab:	<0.03	Hach

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

Alk & Hardness	Alkalinity (mg/L)	Hardness (mg/L)
Control Water (fish):	135	138
20% Dilute Mineral Water (cladocerans):	76	83
100% Sample:	126	154

Table 2. Results of chemical analyses on the effluent from Justiss Mobile Home Park Wastewater Treatment Plant sampled on October 29, 2001.

Metals

Cadmium	0.27	µg/L	
Calcium	38.1	mg/L	
Copper	7.73	µg/L	
Iron	680	µg/L	
Lead	2.18	µg/L	
Magnesium	13.4	mg/L	
Silver	0.017	µg/L	I
Zinc	53	µg/L	

Pesticides and Herbicides

None detected

Base, Neutral, & Acid Extractable Organics

None detected

Chloride

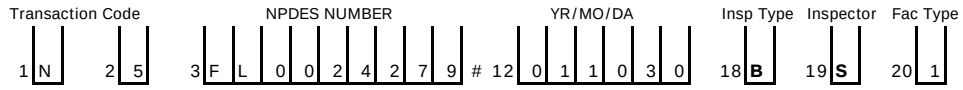
Chloride		mg Cl/L	A

[A] Value reported is the mean of two or more determination.

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

The Bioassay of Justiss Mobile Home Park Wastewater Treatment Plant effluent sampled on October 30, 2001, NPDES #FL0024279.

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

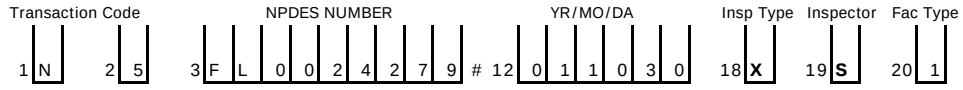


Remarks

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The Priority Pollutants Analysis for Bioassay of Justiss Mobile Home Park Wastewater Treatment Plant effluent sampled on October 30, 2001, NPDES #FL0024279.

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Remarks

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