

Bioassays of

Deertree Hill Mobile Home Park
Wastewater Treatment Plant

Tallahassee, Leon County, Florida

NPDES #FL0038199

Sampled 9/4/01

December 2001

Biology Section

Division of Resource Assessment & Management

Comprehensive Quality Assurance Plan #870346G

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Introduction

Deertree Hills Mobile Home Park Wastewater Treatment Plant, 5234 Blountstown Highway, Tallahassee, Leon County, Florida, NPDES #FL0038199, tests performed on 5 to 7 September 2001.

This wastewater treatment plant has a design flow of 0.015 MGD and an average flow of 0.012 MGD. The wastewater treatment system consists of a grease trap/grit tank, four aeration tanks, a clarifier, a sludge tank, a chlorine contact chamber, and a dechlorination unit. The dechlorination of the wastewater is achieved using sulfur dioxide. Residuals are aerobically digested and transported to T.P. Smith Water Reclamation Facility for disposal. The treated wastewater is discharged into the Class III fresh waters of Gum Swamp.

A consent order is currently open since March 15, 2000, that addresses untimely completion and submittals of permit required corrective actions, and poor operation and maintenance. Deertree Hill Mobile Home Park is planning to join Tallahassee's Regional Sewer System (facility summary provided by Angela Schrift, FDEP, Pensacola).

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 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).

The total residual chlorine concentration in the effluent was measured at 2.55 mg/L in the field, possibly exceeding the State of Florida's water quality criteria for chlorine ($\leq$ 0.01 mg/L) at the time of sampling. However total residual chlorine was not detected in the sample in the laboratory. The total and unionized ammonia concentrations were 0.336 mg/L and 0.007 mg/L in the sample, 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 4, 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 Deertree Hills Mobile Home Park Wastewater Treatment Plant, 5234 Blountstown Highway, Tallahassee, Leon County, Florida, NPDES# FL0038199 performed on 5 to 7 Septmeber 2001.

Facility:	**Deertree Hills MHP WWTP**		**NPDES #**	**FL0038199**	Facility Type:	**Wastewater**	**Analysts:** Della Parker-Hanson
Location:	5234 Blountstown Highway		Contact/District:	David Kriger/Northwest		**Treatment Plant**	Marshall Faircloth
County:	Leon		Test type:	static acute screen			Joshua Ayres
Sample Collection Date:	9/4/01	Time: 1145	# tests:	2	Receiving Water:	Gum Swamp	
Test Beginning Date:	9/5/01	Time: 1330	Chlorination Type:	Chlorinated			**Reviewer:** David Whiting
Test Ending Date:	9/7/01	Time: 1325		sample collected after dechlorination		**Page 1 of 1**	

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	8.2	-	8.1	25.3	-	24.2	8.0	-	7.4	190	240
Control B	0/20	5	5	5	-	-	8.3	-	-	24.2	-	-	7.4	-	220
Control C	0/20	5	5	5	-	-	8.3	-	-	24.2	-	-	7.5	-	220
Control D	0/20	5	5	5	-	-	8.3	-	-	24.3	-	-	7.5		240
100% A	20/0	5	5	5	7.5	-	8.5	25.1	-	24.3	7.8	-	7.6	305	345
100% B	20/0	5	5	5	-	-	8.5	-	-	24.3	-	-	7.6	-	360
100% C	20/0	5	5	5	-	-	8.5	-	-	24.3	-	-	7.7	-	375
100% D	20/0	5	5	5	-	-	8.5	-	-	24.3	-	-	7.7	-	375

[A] Temperatures of room and test incubator were continuously recorded on a strip chart recorder.
Room Temperature range for the test period was 24.0-25.5°C.
Incubator #2 temperature range for the test period was 25.0-27.0°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	7.9	8.4	8.5	25.6	24.2	24.0	7.2	7.2	7.8	260	295
Control B	0/500	5	5	5	7.9	8.4	8.5	25.7	24.0	24.0	7.3	7.9	7.8	270	285
Control C	0/500	5	5	5	7.9	8.5	8.5	25.7	24.1	24.0	7.3	7.6	7.8	270	290
Control D	0/500	5	5	5	7.9	8.5	8.5	25.6	24.1	24.0	7.3	7.6	7.8	265	290
100% A	500/0	5	5	5	7.5	8.1	8.3	25.1	24.1	24.1	6.6	7.9	7.6	305	330
100% B	500/0	5	5	5	7.5	8.2	8.3	25.0	24.1	24.1	6.5	7.5	7.6	310	370
100% C	500/0	5	5	5	7.5	8.1	8.3	24.9	24.0	24.0	6.6	7.5	7.6	310	335
100% D	500/0	5	5	5	7.5	8.1	8.3	25.0	24.0	24.1	6.6	7.4	7.6	310	345

[B] Temperatures of room and test incubator were continuously recorded on a strip chart recorder.
Room Temperature range for the test period was 24.0-25.5°C.
Incubator #3 temperature range for the test period was 24.0-26.0°C.

Data Transcription Verification	
date:	11/7/01
by:	Della Parker-Hanson Joshua Ayres

Total Residual CL2	mg/L	Method
Field:	2.55	-
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:	0.336	0.007

Alk & Hardness	Alkalinity (mg/L)	Hardness (mg/L)
Control Water (fish):	145	136
20% Dilute Mineral Water (cladocerans):	84	87
100% Sample:	121	131

Table 2. Results of chemical analyses on the effluent from Deertree Hills Mobile Home Park Wastewater Treatment Plant sampled on September 4, 2001.

Metals

Aluminum	150	µg/L	[I]
Calcium	25.4	mg/L	
Copper	2.2	µg/L	
Iron	76	µg/L	[I]
Lead	0.28	µg/L	[I]
Magnesium	8	mg/L	
Zinc	13	µg/L	[I]

Pesticides and Herbicides

None detected

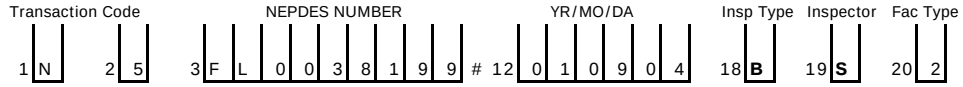
Base, Neutral, & Acid Extractable Organics

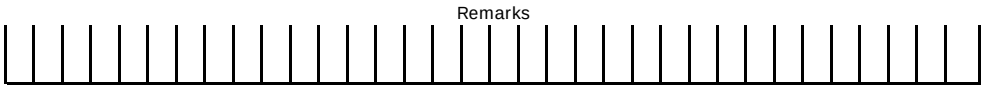
None detected

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

The Bioassay of Deertree Hills Mobile Home Park Wastewater Treatment Plant effluent sampled on September 4, 2001, NPDES #FL0038199.

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

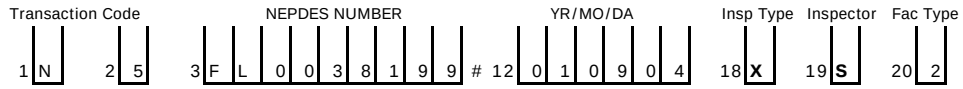


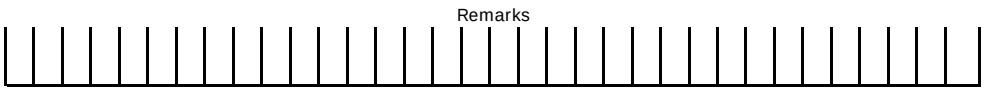


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The Priority Pollutants Analysis for Bioassay of Deertree Hills Mobile Home Park Wastewater Treatment Plant effluent sampled on September 4, 2001, NPDES #FL0038199.

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